Towards entrepreneurial excellence through entrepreneurship education:

An analysis on the students in UKM Malaysia

By

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Hacia la excelencia empresarial a través de la educación emprendedora:

Un análisis sobre los estudiantes de Universidad Nacional de Malasia (UKM)

Resumen

¿Se pueden crear el emprendedores a través de la educación? Los programas de educación para el emprendimiento comenzaron a crecer y a recibir atención de países de todo el mundo desde que se impartió por primera vez en Harvard en 1947. La razón se debió a la interconexión entre emprendimiento y desarrollo económico. La promoción del espíritu emprendedor se vuelve importante debido a la demanda del gobierno, estudiantes, PYMES y grandes empresas (Fayolle, 2007). La mejor herramienta encontrada hasta ahora para predecir el comportamiento es a través de la medición de la intención (Ajzen, 1991). En la literatura emprendedora, muchos estudios se han centrado en la Teoría del Comportamiento Planeado (TCP), que se relaciona con las intenciones empresariales. Varios autores, como Fayolle et al. (2006), han hecho llamamientos para usar esta teoría como un marco común para evaluar la educación emprendedora (EE). Sin embargo, sólo unos pocos estudios han examinado los componentes dentro de la EE que pueden responder a la pregunta "quién enseña (formador), qué (contenido del curso) y cómo (método de enseñanza)" como las variables moderadoras sobre la relación entre la EE y la intención empresarial. Por lo tanto, este estudio pretende llenar el vacío evaluando el efecto moderador de la educación emprendedora, a través de estas variables, hacia la intención y las habilidades de los estudiantes universitarios de pregrado en el contexto de Malasia. Esta investigación utilizará el marco de TCP para entender la conexión entre estos componentes de los programas de educación emprendedora y el impacto en la intención empresarial de los estudiantes.

El estudio se realiza en UKM, Malasia. La población de investigación consiste en estudiantes de primer año en todas las disciplinas. Se trata de un curso obligatorio y es la primera vez que se introduce en Malasia. Este estudio utiliza un método cuantitativo longitudinal. Se llevó a cabo la recolección de datos en dos etapas, incluidas las recopilaciones de datos antes y después del curso. Se utilizó una encuesta en línea. El número de encuestados fue de 493 para el pre-curso y 149 para el post-curso.

El resultado del estudio mostró que tanto el formador como la participación de un orador invitado moderan la relación entre actitud e intención. El efecto es de intensidad moderada, pero muestra el importante papel que pueden desempeñar estos dos elementos para influir en la intención empresarial entre los estudiantes. Para la comparación entre géneros, los resultados mostraron que los varones exhiben un mayor interés empresarial en el emprendimiento, en comparación con las alumnas. Sin embargo, en cuanto al número de estudiantes en las universidades públicas de Malasia, las alumnas son la mayoría. Los resultados también muestran que el grupo étnico que más se beneficia de la EE es el malayo. Tienen un mayor interés por el espíritu empresarial, a pesar de que este campo ha sido tradicionalmente dominado por los chinos desde el período colonial. Finalmente, como en muchos estudios previos, los resultados mostraron que los estudiantes de la Facultad de Economía y Administración se benefician más en términos de interés hacia el curso.

Algunas recomendaciones para el futuro pueden derivarse de esta tesis doctoral. El gobierno debe comenzar a centrarse en las alumnas, ya que su participación en el mercado de trabajo (tasa de actividad) es baja en comparación con el número de mujeres en la población y con las estudiantes que acceden a la universidad. Por lo tanto, esta tasa de actividad se espera que aumente en el futuro. Además, los profesores de estos cursos deben recibir una formación

especial sobre cómo atraer el interés de los estudiantes, como señalan Soutaris et al. (2007). En cuanto a la estructura del curso, se debe alentar una combinación entre el formador y los empresarios invitados de éxito, para que la parte de inspiración pueda ser transmitida a los estudiantes.

Towards entrepreneurial excellence through entrepreneurship education:

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Abstract

Can entrepreneurs be created through education? Entrepreneurship education programs started to growth and receive attention from countries all over the world since it was first taught in Harvard in 1947. The reason was due to the interconnection between entrepreneurship and economic development. Promotion of entrepreneurship becomes important due to demand by government, students, SMEs and large companies (Fayolle, 2007). The best tool found so far to predict behavior is through the measurement of intention (Ajzen, 1991). In the entrepreneurship literature, many studies have been focused on the Theory of Planned Behavior, which related to entrepreneurial intentions. Several authors, such as Fayolle et al. (2006), have made calls to use this theory as a common framework to evaluate entrepreneurship education (EE). However, only few studies have looked at the components inside the EE that may answer the question "who teaches (trainer), what (course content) and how (teaching method)" as the moderating variables on the relationship from EE to entrepreneurial intention. Therefore, this study aims to fill in the gap by evaluating the moderated effect of entrepreneurship education, through these variables, toward the intention and skills among the undergraduate university students in the context of Malaysia. This research will use TPB framework to understand the connection between these components of entrepreneurship education programs and the impact on the students' entrepreneurial intention.

The study is conducted in UKM, Malaysia. The research population consists of first year students across all disciplines. The status of the course is compulsory and is the first

time it is introduced in Malaysia. This study use a longitudinal quantitative method. Two-stage data collection was carried-out, including pre- and post-course data collections. An online survey was used. The number of respondents was 493 for the pre-course and 149 for the post-course.

The outcome of the study showed that both the trainer and the participation of an invited speaker moderate the relationship between attitude and intention. The effect is moderate in strength, but it showed the important role that can be played by these two elements to influence the entrepreneurial intention among student. For the comparison between genders, the results showed that males exhibit a higher entrepreneurial interest in entrepreneurship, when compared to the female students. However, regarding the number of students in public universities in Malaysia, females students are the majority. The results also show that the ethnic group benefitting the most from EE is the Malay. They have higher interest toward entrepreneurship, even though this field has traditionally been dominated by the Chinese since the colonial period. Finally, as in many previous studies, the results showed that students in the Faculty of Economic and Management benefit the most in term of interest toward the course.

Some recommendations for the future may be derived from this dissertation. The government should start focusing on female students, since their participation in the labour market (activity rate) is low when compared to their number of females in the population and the students entering university. Thus, this activity rate is expected to rise in the future. Additionally, the lecturers of this course should be given special training on how to attract students' interest, as pointed out by Soutaris et al. (2007). Regarding the structure of the

course, a combination including the lecturer and successful invited entrepreneurs should be encouraged, so the inspiration part can be conveyed to the students

CHAPTER 1: INTRODUCTION

This chapter contextualises the purpose, theories and methods of this research. It begins by providing the background of the study, followed by the problem statement, the research questions, the significance and scope of the study, the research framework and a summary of the research hypotheses. Finally, the researcher briefly comment on the research method, the data analysis and the limitations of the study.

1.0 Background of study

Today, entrepreneurs are a global phenomenon, and many people consider them the backbone of the economy. Entrepreneurs such as Steve Jobs, Bill Gates, Warren Buffet and Richard Branson have become idols for many people. One of the significant discussions among researchers is about education's contribution to entrepreneurship. Entrepreneurship courses have grown rapidly all over the world since Myles Mace offered the first one at Harvard Business School in 1947 (Katz, 2003). The United States has become the leading country to offer entrepreneurship courses. Even though entrepreneurship education has received much attention in the past decade, there are still several unresolved issues, such as the best method to develop entrepreneurship through education (Fayolle & Gailly,2015; 2008). According to Nabi and Liñan (2011), there is a lack of research related to entrepreneurship education and entrepreneurial intentions in developing countries. This study contributes to filling this gap by investigating how entrepreneurship education variables—course content, teaching method and trainer—can contribute to the development of Bumiputera entrepreneurship in Malaysia.

2.0 Problem statement

Malaysia is a multiracial country where the majority consists of Bumiputera[1] followed by Chinese and Indian. As Malaysia becomes a high-income country, it is important to resolve human capital issues such as unemployment, income gaps among ethnicities and dependence of the Malays on government aid. Despite the Malaysian economy moving quickly since its independence from colonisation 59 years ago, a substantial share of the population, especially the Malay ethnic group, has been left behind economically. Therefore, development of the Bumiputera group has become a government priority.

Officially, the effort to develop the entrepreneur community, especially the Malays, began in the 1970s. However, even after 46 years of New Economic Policy(NEP) , the results have not been achieved as targeted. Tremendous efforts through policies and agencies have been made, but so far, the results have not reflected the efforts. Statistics by the Companies Commission (2009) show that only 21% of private limited companies belonged to Bumiputera, and 30% were for sole proprietorship. In 2012, only 10.7% of publicly listed companies belonged to Bumiputera, and only 74% of those companies made a profit. Research by Shokory et al. (2008) shows that education plays a big role in the success of the Bumiputera companies.

A study by GEM (2011), for instance, shows that only 9% of adults in Malaysia intend to be involved in business, and research by the Malaysian government showed that only 0.5 out of 10 Bumiputera are involved in business, compared to 4 out of 10 Chinese (Sixth Malaysia Plan 1991-1995). Even though the country is ruled by the Malay-dominated party UMNO and many special aids and privileges have been provided for the Malay, the results are disappointing. In *Forbes* (2017) list of the richest men in Malaysia, only one Malay

[1] Bumiputera are the native people where the majority (81%) consist of Malay ethnicity (Son of soil)

person made the list of 25 richest men (ranked 10th). On the other hand, the Chinese entrepreneurs in Malaysia dominated the list (22 entrepreneurs out of 25) and hold the top spot.

Looking at all the infrastructure that was provided by the government through its policies and agencies, it seems that all the requirements needed to develop entrepreneurship are there, such as the capital, law and training. According to the Minister of International Trade and Industry (2012), there are eight ministries in Malaysia involved in developing Bumiputera entrepreneurs. The government has also provided 16.1 billion RM[2] since 2006 to develop Small and Medium Enterprises(SMEs). In terms of ease of doing business, Malaysia currently ranks number 6 out of 186 countries. Education programmes were also started at the secondary school level to increase interest in entrepreneurship (Zaidatol et al., 2002). Officially, entrepreneurship education in the university started in the 1990s (Cheng et al., 2009). Despite the implementation of entrepreneurship education, the involvement of graduates in entrepreneurship is still very low.

Looking at the education system, every year more than 80,000 students graduate from Malaysia universities. However, data by the government show that less than 2% of these students get involved in business or become entrepreneurs. A special fund for graduate entrepreneurs was established, but the results have been disappointing. For example, in 2008, 100 million ringgit was provided for graduate entrepreneurs, but only 2.7% was applied from the 100 million. From 2010 to 2012, only 137 graduates have applied for the fund out of 240,000 graduates from the universities during those years.

Apparently, all of the elements needed to develop entrepreneurship are there except human capital. Concern has arisen about the effectiveness of entrepreneurship courses at the university level in developing entrepreneurs (Cheng et al., 2009; Mansor & Othman, 2011;

[2] Malaysia Currency. 1 RM = 0.21 Euros (April 21st, 2017).

Othman et al., 2012). However, far too little attention has been paid to this issue, which this study attempts to address. The challenge of the study is to change the attitude of the Malaysians, especially the Malays.

3.0 Research questions

This study addresses the following research questions:

1. Do variables like trainer, teaching method and content impact entrepreneurial intention?
2. Are Chinese students more entrepreneurial than the Bumiputera (Malay)?
3. Are students from the Faculty of Business more entrepreneurial than other students?
4. Does the current EE content increase the entrepreneurial intentions of students?
5. Does the trainer play a role in increasing the entrepreneurial intention of students?
6. What entrepreneurial knowledge and skills are gained through the course?
7. Are there any contributing factors that will trigger interest in entrepreneurship?

4.0 Relevance of the study

This study tries to make a contribution to several important areas:

1. To analyse the effect of the first compulsory programme for first-year students across disciplines in Malaysia
2. To contribute to this growing area of research by enriching the usage of Theory of Planned Behavior (TPB) in entrepreneurship education, especially in the context of a multiracial country like Malaysia
3. To offer some important insights in the field of EE and give suggestions for the policymakers to develop more Malay entrepreneurial graduates

4. To clarify whether the course is a fit for all or needs to be customised according to ethnicity or education field and gender in an effort to develop and increase the number of entrepreneurial graduates
5. To serve as a record and account of the history of implementation of Malaysia's first compulsory entrepreneurship course in one of Malaysia's oldest universities.

5.0 Scope of study

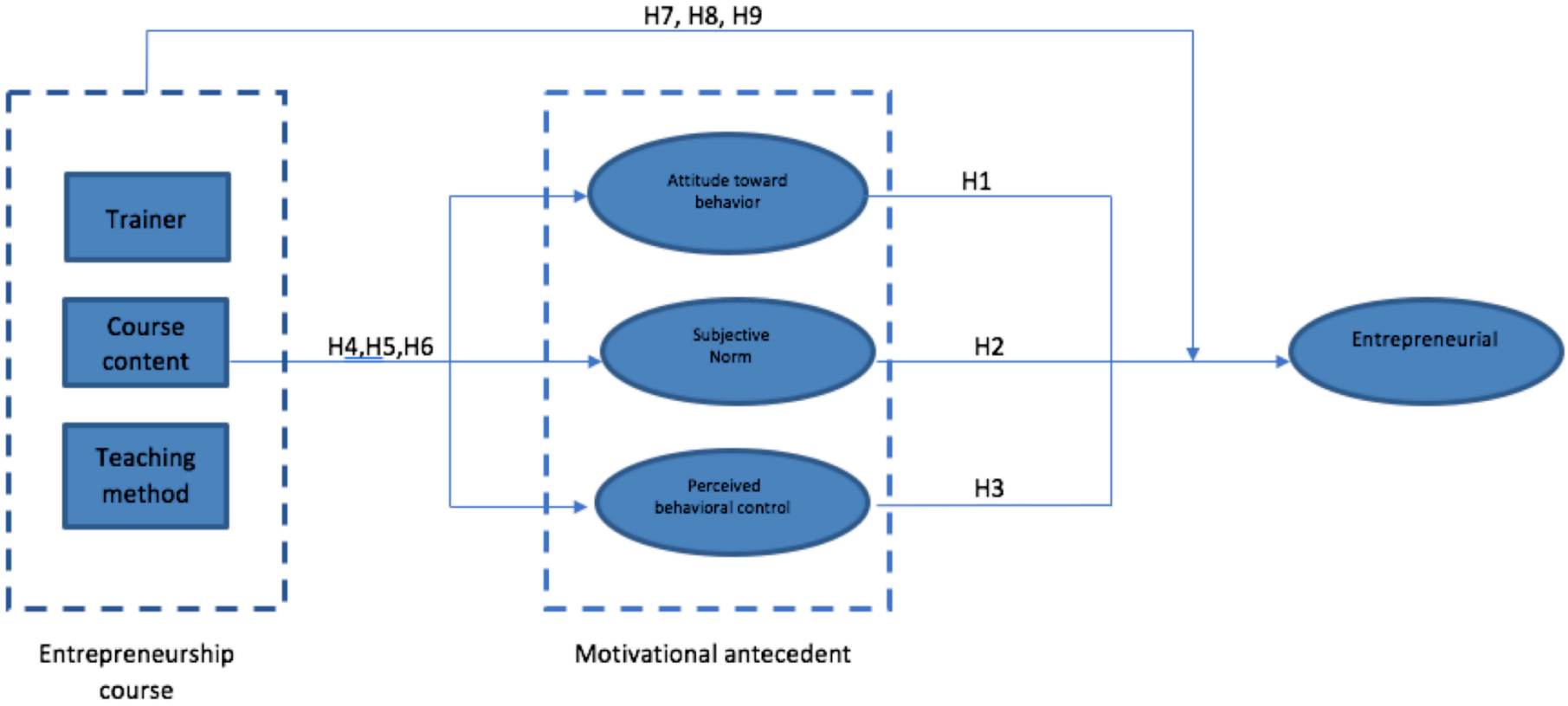
This study covers the compulsory entrepreneurship course offer by CESMED (Centre for Entrepreneurship and SMEs Development) for all the first-year students at National University of Malaysia (UKM).

6.0 Theoretical framework

This study focuses on the intention of students in the University Kebangsaan Malaysia (UKM) towards entrepreneurial behaviour. Many studies have shown that entrepreneurial intention could be strengthened through education (Turker & Selcuk, 2009; Rueda et al., 2015; Ertuna & Gurel, 2011). Most studies in this field have evaluated entrepreneurship education in terms of general evaluation instead of analysing its components, as this study plans to do. These elements are contents, methodology, educator and organisation of the process (Hytti & Kuopusjarvi, 2004). This study builds on previous studies by using an instrument developed by Liñan and Chen (2009) and Rueda et al. (2015) to measure the effectiveness of entrepreneurship education (EE). This study aims to go into more detail by incorporating the entrepreneurship course elements, which are the teaching method, course content and trainer as the intervention variables. This study will look at those three elements since they relate directly to the course. Intention for this study will refer to target behaviour to set up a business as in Krueger et al. (2000).

According to Ajzen (2006, p. 3), 'the greater the relative weight of a given factor, the more likely it is that changing that factors will influence intention and behavior'. Any intervention in any of the three educational elements could result in a change in intention and finally behaviour. In this study, the entrepreneurship course and the elements within the course, such as the content or the trainer, act as the intervention. This study argues that the exogenous factors of content, teaching method and educator represent the interventions to impact indirectly on intention by their effect on motivational antecedents. Intention can be influenced since the three antecedents are perception-based (Krueger et al., 2000). The learning process through the entrepreneurship course could play a role in changing students' beliefs and perceptions.

Figure 1.1. Entrepreneurship education elements and its impact on the entrepreneurial intention.



7.0 Hypotheses

7.1 Impact of the three antecedents on entrepreneurial intention

There is a positive effect of the motivational antecedents on students' intention to become entrepreneurs:

H1: The attitude toward behaviour has a positive effect on intention.

H2: The subjective norm has a positive effect on intention.

H3: The perceived behavioural control has a positive effect on intention.

7.2 Impact of entrepreneurship education on the motivational antecedents

Entrepreneurship education elements have a positive effect on students' motivational antecedents:

H4: Entrepreneurship education has a positive effect on attitude.

H5: Entrepreneurship education has a positive effect on subjective norms.

H6: Entrepreneurship education has a positive effect on perceived behavioural control.

7.3 Moderating role of entrepreneurship education on the antecedent-intention relationship

Entrepreneurship education elements have a moderating effect on the relationship between the students' motivational antecedents and their entrepreneurial intentions:

H7: The trainer as a role model moderates the relationship between motivational antecedents and student intention.

H8: The teaching method moderates the relationship between motivational antecedents and student intention.

H9: The course content moderates the relationship between motivational antecedents and student intention.

8.0 Research methodology

8.1 Research population

In this study, the populations have been fixed because the researcher was funded by UKM, where this study was conducted. The population for this research consists mainly of first-year students in the compulsory entrepreneurship course at UKM, which is implemented under CESMED. This course is Fundamentals of Entrepreneurship and Innovation (CMIE 1012), which was originally developed by the Steven Institute of Technology (SIT). The target respondents are the first-year students from 12 faculties at UKM. The total number of students for these faculties for the year 2013/14 is 3192 students. This is the third intake for this course. The students for this course consist of different races, genders, state and family backgrounds. The number of students surveyed is based on the number of students on the list received from CESMED UKM. The results are expected to be reliable with this sufficiently high sample.

8.2 Implementation of Survey

The survey was conducted as a longitudinal study through an online survey. This method was chosen for several reasons, including the high number of respondents, the issue of demographics where the researcher conducts the study, the locations of the university campuses in different regions and cost. Based on Lorz et al. (2013), there is a lack of longitudinal studies on the impact of the course.

Originally, the researcher planned to distribute the questionnaire by paper before the class started. However, because more than 3000 students are registered, it is not possible to conduct the research face to face. Another reason was economics when the research is conducted in different regions from the researcher's university.

To increase the participation rate, the survey was sent to all students enrolled in the course. In total, 3192 questionnaire invitations were sent by an online survey. Information about each student was received from the CESMED. The respondents were asked to give their honest answers for all the questions.

The first round of data collection for the students was done for the pre-course and the second round of data for the post-course. Additional information was gathered through secondary sources and interviews with the director, vice director and course coordinator.

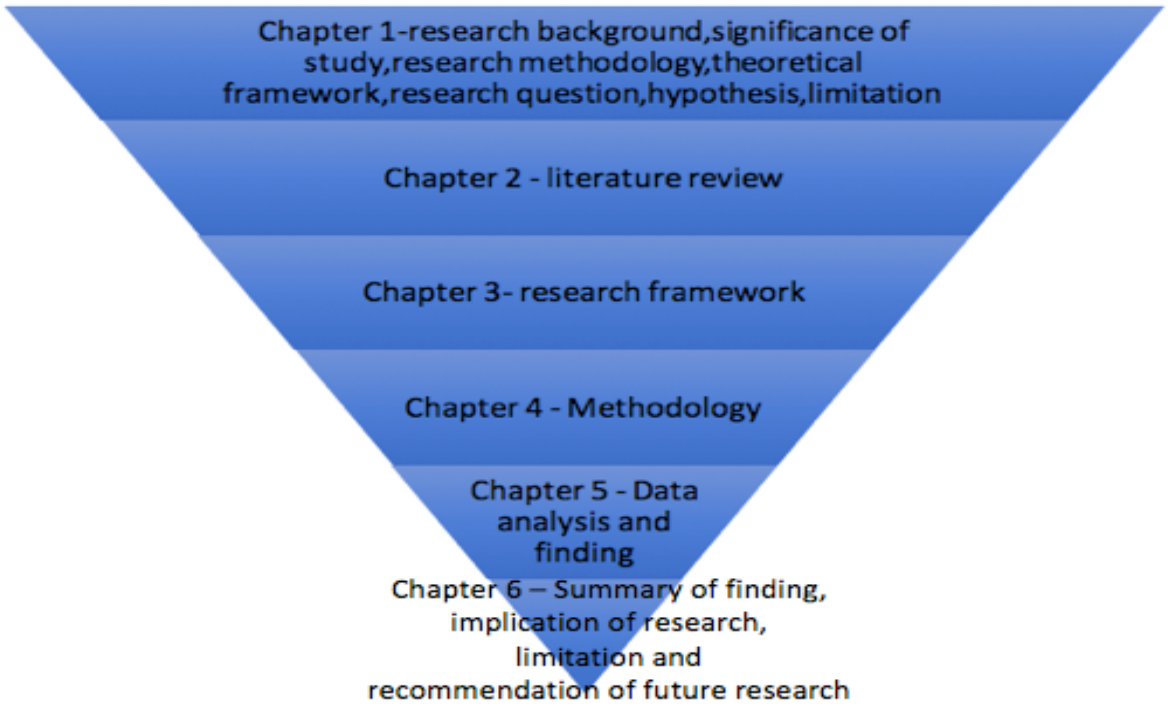
8.3 Data analysis

Data analysis for this study uses SPSS and Smart PLS 3.0 to analyse the data. A study by Lorz et al. (2013) showed a lack of SEM usage for this field. This study also showed that there was only two pre- and post-course research that used SEM for the method of analysis.

9.0 Limitations

Given the timeframe and length of this study, it cannot be too detailed about specific best characteristics of trainers who teach entrepreneurship, or what specific content or teaching methods can produce the best results to achieve the objective of the EE. Similarly, the study will not be able to see whether the intention of the students really turns into behaviour in a short period. Confirmation of the students' intention would require a longitudinal study with the same respondents, which this study cannot do.

10.0 Structure of thesis



This dissertation was divided into six chapters. Chapter one introduces the study, which provides the background of the research, problem statement, research objective, research question, research framework, significance of the study, research methodology and limitations. Chapter two presents the literature review. This chapter consists of the theory on entrepreneurship education and the historical and current scenario about the importance of this research in Malaysia. Chapter three discusses the research framework. The discussion was on the theoretical framework, proposed research framework and the hypotheses to be tested. Chapter four explains the research methodology for this study. Chapter five explains the findings and discusses the study. Finally, chapter six presents the summarised findings and implications of the research. These chapters also include some limitations and suggestions for future research.

CHAPTER 2: LITERATURE REVIEW

2.0 Importance of entrepreneurs

The theme of entrepreneurship has been found in literature since the 18th century (Baumol, 2011). The question, "Why are some countries richer than others?", which was asked by Farrel (2001), has been a significant discussion in the world, and several researchers agree that entrepreneurship is the answer to this question. According to Toma et al. (2014), awareness of the importance of SMEs to economic growth started in the 1970s. The function of entrepreneurs as founders and innovators contributed to economic growth (Toma et al., 2014).

Research by Toma et al. (2014) found that entrepreneurship and economic development have a strong connection through the reallocation of resources, employment, and welfare and through innovation, which creates new demand through new goods and service. For countries like America, 'entrepreneurship is the back bone of the American economy" (Birch, 1993, p. 22).

A report by the Organisation for Economic Co-operation and Development (OECD) (1998, mentioned that entrepreneurship is central to the functioning of market economies. Entrepreneurship does affect economic development and they are interconnected. Many studies have had similar results (OECD, 1998; Davidsson, 2008). Fayolle (2007) claims the role of entrepreneurs is a catalyst for economic development.

According to Birch (1989), there are two types of small businesses in the US, 'income subtitutor' and 'entrepreneurial business'. Birch explained that income subtitutor as people who do side business to earn extra income. Meanwhile entrepreneurial business is business that expand in short period of time. He also stated that 90% of the new jobs were created by entrepreneurial business. Seven years of data, from 1980 to 1987, showed that even though

3.1 million jobs were lost in the fortune 500, 16 million new jobs were created by new start-ups. The comparison between France and the US from 1975 to 1983 showed a big difference in terms of the entrepreneurial levels. Job loss in France was significant, but the US added 16 million new jobs to cover the 3 million jobs that were lost from the big companies. The study by Birch (1989) found that differences between cultures, especially regarding 'risk taking and failure', are the main reasons for the different entrepreneurial levels in the US and France.

In 1988, Birley conducted research in Indiana for five years that also showed that new ventures do contribute to job creation. A longitudinal study by Birch (1989) also found that small companies contributed to the creation of new jobs, while the Fortune 500 companies lost jobs. In the US, for example, 3 million jobs were lost and replaced by 16 million from small companies. In his study, Birch also found that statistically Fortune 500 companies were 2 and one half times more likely to run out of business compare to the new venture company. Comparing the conditions in the US and France, Birch stated that they have different types of problems, but they could both be solved by entrepreneurship; however, France did not do that because of culture differences.

In 1992, Birch conducted another study in which he traced 24 million jobs created by SMEs and 4 million jobs lost from Fortune 500 companies from 1980 to 1990. He identified that in Europe, the culture is different compared to the United States, where failure is considered comparable to death to an entrepreneur.

Small, newer companies are more innovative and have a higher job growth rate (Shapero, 2002). The SMEs' strengths include the possibility of high technology innovation, fewer required economic resources, lower risk for the community and lower investment for the government.

Besides job creation, OECD (1998) identifies a few other benefits of entrepreneurship to society such as solving the unemployment issue and 'glass ceiling' among immigrants and

women and offering an incentive to entrepreneurs to be in a different position compared to working for others.

Despite many researchers supporting the view that entrepreneurship is linked to economic growth, some scholars find contradictory results. For example, research by Deakins (1999) showed that most SMEs in the UK do not create a high number of jobs like other countries. Some of the reasons, as stated in Henry et al. (2003), may be displacement of old businesses because of competition by new business and too much expectation of job creation by SMEs.

2.1 Entrepreneurship

The history of entrepreneurship can be tracked as early as the period when Marco Polo tried to find trade routes to the Far East (Hisrich, 2014). In that time, the adventurer became the risk taker in term of their physical and emotional resources.

The entrepreneurship field owes much gratitude to Richard Cantillon (1680-1734), who was an anglo–Irish economic writer (Baumol, 2011; Casson, 2011), a venture capitalist (Filion, 2011) and a member of Physiocrats that first associated the term with economic activity in his paper "Essai sur la nature du commerce en general" in 1755. Cantillon is believed to be the person who initially used the term entrepreneur which means risk taker (Hisrich, 2014). Literally the word comes from the French word 'entreprendre' which means to undertake ('entre' means 'between' and 'prendre' means 'to take').

Surprisingly, Landstrom (2005) indicated that the French have used that word since the twelfth century. He claims that the "Dictionnaire de la language francaise" was the first to include the word in 1437. In early days, this word was associated with 'brutal war-like activities' where warriors were also called entrepreneurs (Landstrom, 2005).

In contrast, Baumol (2011) claims that the terms 'adventurer' or 'undertaker' were used in English literature before Cantillon introduced the term. Consistent with that, Landstrom

(2005) said that the definition of 'adventurer' was printed in *A Dictionary of English Language* and had a definition that described 'entrepreneur'.

Despite the long history of this term, researchers cannot agree on the definition of entrepreneurship (Davidsson, 2005). In fact, a 1971 paper by Kilby described 'entrepreneur' as a 'Heffalump' because 'no one so far has succeeded in capturing him'. There are three people who are commonly considered pioneers for this field: Richard Cantillon, Jean Baptiste Say and Joseph Alois Schumpeter.

Cantillon was responsible for using the term 'entrepreneur' in the economic field. Later, French economist Say broadened the definition to include the factor production. According to Say, as quoted in Drucker (1985), it is a meaning that 'shifts economic resources out of an area of lower and into an area of higher productivity and greater yield'. Schumpeter added to the modern concept of entrepreneur when he introduced the concept of innovation to entrepreneurship. According to Schumpeter, entrepreneurs disturb the market equilibrium. They become the main catalyst in economic development, according to Schumpeter (1934) in his book *Theory of Economic Development*. Many people wrote about entrepreneurship, but Schumpeter was considered the father or prophet of the entrepreneurship field because he introduced the role of innovative entrepreneur (Bazhal, 2016).

There are many definitions of entrepreneurship that scholars have proposed in various contexts, and not one was agreed upon as a standard definition. Landstrom (2005) argued for different definitions not just in this field but in all other fields as well because of different backgrounds of research and fields of study, and the field itself is 'complicated, ambiguous and changeable phenomenon' (Landstrom, 2005, p.11). Landstrom (2005) said that the concept was defined by two main groups as 'societal phenomenon' and 'scholarly domain'. Landstrom (2005) and Davidson (2001; 2003) suggest the need for different definitions within these two domains. The different definition in the scholarly domain is needed so this

phenomenon can be studied, because societal phenomenon only looks at the successful results of entrepreneurship.

Landstrom (2005) identifies three methods used by researchers to give entrepreneurship a definition in the scholarly domain. These methods are entrepreneurship as a process, individual and function of the market. The methods and authors contributint to each function are summarised in Table 2.1 below:

Table 2.1. Approaches and contributions to define entrepreneurship

Approaches	Definition	Author	Year
Function of market	Risk taker/risk manager	Cantillon	1755
		Say	1803
		Knight	1916
	Opportunity creator/innovator	Schumpeter	1912
		Dahmen	1950
		Baumol	1993
	Coordinator of limited resources	Say	1803
		Casson	1982
	Alert seeker of opportunities	Mises	1951
		Kirzner	1973
	Capitalist	Smith	1776
		Ricardo	1817
		Marshall	1890
Entrepreneur as an individual	Innovator introducing new combinations of resources	Schumpeter	1934
	An individual or group of individuals who initiate, maintain or expand a profit-oriented business unit for production or distribution of economic goods and services	Cole	1959
	The entrepreneur takes initiatives, organised social and economic mechanisms and accepts the risk of failure	Shapero	1975
	A major owner and	Brockhaus	1980

	manager in a business venture		
Entrepreneurship as a process	Entrepreneurship is a process—the emergence of new organisations	Gartner	1988
	Business entry, whether by start-up or acquisition and whether independently or within an established organisation	Gartner & Vesper	1994
	Entrepreneurial process involves all the functions, activities and actions associated with perceived opportunities and the creation of organisations to pursue them	William Bygrave & Charles Hofer	1991

From the Table 2.1, we can see that entrepreneurship as an individual approach is guided by the questions 'Who are entrepreneurs'? and 'Why do they act?' (Landstrom, 2005; Stevenson & Jarillo, 1990). Entrepreneurship as a process is guided by the question, 'How is entrepreneurship developed?' (Landstrom, 2005; Stevenson & Jarillo, 1990).

There are many definitions of entrepreneurship offered by various researchers. Some of the definitions are as follows:

- Some researchers relate entrepreneurs to their involvement in the start-up process. For example, entrepreneurship is defined as the 'creation of new enterprise' by Low and MacMillan (1988). Learned (1992) defined entrepreneur as 'individual or individuals who may attempt or who are attempting to found a business'. According to Drucker (1985), the US has always defined entrepreneur as 'one who starts his own, new and small business'. But Stevenson and Jarillo (1990) and Shane and Ventakaraman (2000) argue that if only people who established a company from the start are

considered entrepreneurs, then many successful businesspeople who take over will not be considered entrepreneurs.

- There is also a definition related to new creation in Hisrich (2014, p. 9), which is 'the process of creating something new with value by devoting the necessary time and effort, assuming the accompanying financial, psychic, and social risks and receiving the resulting rewards of monetary and personal satisfaction and independence'.
- Some researchers define entrepreneurship related to opportunity. For example, Stevenson and Jarillo (1990, p. 23): 'Entrepreneurship is a process by which individuals—either on their own or inside organizations—pursue opportunities without regard to the resources they currently control.'
- More recently, the definition includes personal features. For example, Gibb (2007, pg 1) defined entrepreneurship in 'terms of sets of behaviours, attributes and skills that allow individuals and groups to create change and innovation, cope with and even enjoy higher levels of uncertainty and complexity'

Despite the long history, no standard definition for entrepreneur has been accepted by scholars (Gartner; Carland et al., 1988; Ibrahim and Ellis, 1998; Fayolle, 2011).

This study agrees with Brockhaus in Katz and Brockhaus (1993), who said that the term entrepreneur had different definitions depending upon what research was being studied.

For our study, we will define the entrepreneur as "major owner or manager of own business who take initiative and risk to open a business by taking opportunity available in the market and bring innovation for the purpose of profit and growth", The definition was based on combination of the 3 approaches mentioned earlier. Entrepreneurship will adopting almost similar definition by Stevenson and Jarillo (1990) and Gartner (1988) as "the creation of new organization or take over any existing organization to pursue the opportunity with regard to

resource they currently control to bring innovation through product, services, value and production method to the market".

2.2 Entrepreneurship education (EE)

As mentioned by Myrah and Currie (2006), entrepreneurship education (EE) is still in the infancy of its development. The first entrepreneurship course was offered at the Harvard Business School by Myles Mace in 1947 (Landstrom, 2005). Since then, there has been interest from all over the world. At one point, the demand surpassed the supply (Sexton, 1988). Like entrepreneurship, the term entrepreneurship education also has various definitions according to the user. Since no standardised definition is agreed upon by researchers, they use the definition that is closest to their objective, and as a result there are problems with generalising the new added knowledge (Matlay, 2005).

Entrepreneurship education is different from entrepreneurship training. According to GEM (2008), 'entrepreneurship training is the building of knowledge and skills in preparation for starting a business. Thus, the purpose of entrepreneurship training is very specific, unlike the purpose of entrepreneurship education, which can be much broader'. In another study by Hynes (1996, p. 10) entrepreneurship education is defined by Garavan et al. (1995) as 'the process or series of activities which aims to enable an individual to assimilate and develop knowledge, skills, values and understanding that are not simply related to a narrow field of activity, but which allow a broad range of problems to be defined, analysed and solved'. Meanwhile, entrepreneurship training is defined as a 'more planned and systematic effort to modify or develop knowledge, skills, etc., through learning experiences to achieve effective performance in an activity or range of activities' (Hynes, 1996, p. 10).

Entrepreneurship education and training can be separated, as indicated by Hynes (1996) in Table 2.2 below.

Table 2.2. Comparing entrepreneurship education and training

Comparison factor	Training	Education /Formal
Focus on activity	On knowledge skills,ability and job performance	On structured development of individual to specific outcomes
Clarity of objectives	Can be specified clearly	Objectives stated in general terms
Time scale	Short term	Specified period
Values which underpin activity	Assumes relative stability, Emphasizes improvement	Emphasis on breakthrough
Nature of learning process	Structured or mechanistic	Structured or mechanistic
Content of activity	Knowledge, skills and attitudes relevant to specific job, basic competence	Imposed and specified curricula
Methods used	Demonstration, practice, feedback	Lectures, guided reading, debate, self-managed learning
Outcomes of process	Skilled performance of tasks which make up a job	External specified outcomes
Learning strategy used	Didactic tutor-centred	Combination of didactic, skill building and inductive strategies
Nature of process	Outside in, done by others	Largely outside in, done by others
Role of professional trainer	To instruct, demonstrate and guide	Act as an expert,instruct,facilitate and guide to learning resources
Document trainer philosophy	Instrumentalism: transfering knowledge using formal methods and measuring results	Combination of instrumentalism and existentialism
Process of evaluation	Evaluation against specific job performance standards	Evaluation in terms of pass/fail levels
Link with organization mission and strategies	Not necessarily linked to organization's mission and goals	Not necessarily linked to organization's mission and goals

Besides Entrepreneurship Education, EE, another term used is small business education (Bechard & Toulouse, 1998). The term EE is not just varied based on definition but also countries. For instance, in the US, the term entrepreneurship education is used, but in the UK, enterprise education is used (Gibb, 1993). Garavan and Cinneide (1994) point out that the difference between the terms is the course objectives. Some countries use both terms. According to Gibb (1996), the term 'entrepreneurship is much preferred to small and medium enterprise' in university.

Another term related to EE is entrepreneurial learning. Jones (2011, p. 3) defined entrepreneurial learning as 'less about the knowledge of the educator, and more about the support of the educator. It is about the creation of what doesn't exist, rather than the maintenance of which does. It is about freedom not restriction, and it is as much about failure as it is success'.

In 2004, Jones and English (2004, p. 417) defined EE as 'skills that can be taught and the characteristics that can be engendered in individuals that will enable them to develop new and innovative plans'.

In 2007, Fayolle emphasised that to define EE, one needs to know whether the word is used 'to teach' or 'to educate' because both definitions have separate meanings, as indicated in Table 2.3 below:

Table 2.3. Differences between teaching and education

To teach	To impart knowledge or skill to; to provide knowledge of; instruct in; to condition to a certain action or frame of mind; to cause to learn by example or experience
To educate	To develop the innate capacities of, especially by schooling or instruction; to stimulate or develop the mental or moral growth of; to develop or refine (one's taste or appreciation…

Source: Fayolle (2007).

Fayolle (2007; 2011) proposed a combination of both to be used in EE to be most effective. He added that there are problems with various definitions because EE will not just come from academics, but also from other parties such as politics and practitioners. However, Fayolle (2007, p. 54) suggested agreed criteria for EC member countries, which cover two areas:

'1) a broader definition of entrepreneurship education that should include the development of entrepreneurial attitudes and skills as well as personal qualities and should not be directly focused on the creation of new ventures.

2) a more specific concept of new venture creation-oriented training' (European Commission, 2002).

In 2011, Jones proposed that lecturers use the EE definition that matches their course objectives and needs. While many definitions of entrepreneurship education have been suggested, this paper will use the definition suggested by Jones (2011, p. 28), who saw it as 'a process of transformational education through which students are encouraged to better understand their capacity to create future opportunities for satisfaction through exposure to different learning experiences crafted from a learner-centred approach'. For this study, the term entrepreneurship education will be used.

2.2.1 Issues and research in entrepreneurship

There have been debates for years about whether entrepreneurs are born or made. Kuratko (2005) suggests that entrepreneurship can be learnt. He quotes what Drucker said about entrepreneurship: 'The entrepreneurial mystique? It's not magic, it's not mysterious, and it has nothing to do with genes. It's a discipline. And, like any discipline, it can be learned' (Kuratko, 2005, p. 580). Fayolle (2007; 2011) agrees with Hindle (2007), who suggests that entrepreneurs are like other professional occupations, like lawyers or doctors,

and people can be taught to do it. However, Fayolle (2007; 2011) says that the issue is whether people can be successful entrepreneurs or not. This is also similar to other fields in that there is no guarantee that the students who were trained will all be successful in their careers. Hindle (2007, p. 109) also says that entrepreneurship 'can be taught even if the aptitude and motivation to be a great entrepreneur cannot'. Hynes (1996) and Neck and Greene (2011) also suggest that entrepreneurship can be learnt because it is a skill set. But even though EE can be learned, as pointed out by Jones and English (2004, p. 417), 'no amount of education can provide business success for those who lack the "entrepreneurial spirit"'.

Still, there is no denying that although many researchers suggest that entrepreneurship can be taught, the issue of whether some entrepreneurs are born is still debated as mentioned in Fayolle (2011). For example, successful entrepreneurs like Bill Gates, Steve Jobs, Mark Zuckerberg and Richard Branson did not receive a proper entrepreneurship education, but they are among the most successful entrepreneurs in the world. This does not just happen in the US; even in a country like Malaysia, the richest man, Lim Goh Tong, never went to university or received a formal education. Even today, some top entrepreneurs did not get a proper education in entrepreneurship. Those who believe that entrepreneurs are born think that their psychology and their personality is what makes them successful. Steve Jobs, for example, after being fired from Apple, created another company that also became one of the most successful companies. This indirectly supports those who believe that entrepreneurs are born.

According to a report by the OECD (1998), even if entrepreneurship can be learned, not everyone will have the same competency (OECD, 1998). Another study by OECD (2012) in EU and non-EU countries showed that most of the respondents agreed that entrepreneurship education could help them better understand entrepreneurship and develop their skills, know-

how and entrepreneurial attitude. Education can help develop entrepreneurs by developing the necessary skills, increasing their confidence and providing access to necessary networking (Toro, 2014).

Hindle (2007, pg 111) said, 'I believe that entrepreneurship, as a major social phenomenon and a deeply important realm of human behavior, can provide the basis for learning that transcends specialist functionality and does something for the total development of each human being who studies it'. 'It is a wellspring economic growth, social renewal and personal development' (Hindle, 2007, p. 112).

'Tomorrow belong to those who have vision today! It is an entrepreneurial age-a time requiring innovation vision, courage ,calculated risk-taking, and strong leadership'(Morris et al. 2010, p. xiv). This suggests that only people who have vision can achieve what they want, for example, Steve Jobs. In terms of education, Katz (1994) indicated that entrepreneurs have higher qualifications than others. Despite prior evidence, having the entrepreneurial characteristic does not mean a person will become an entrepreneur (Steward, 1996). However, a similar study did show that entrepreneurs have a higher risk-taking propensity and higher need for achievement than managers. This brings us back to the history of trait research in entrepreneurship.

Past entrepreneurship research started with research related to the trait approaches, moved towards demographic approaches before finishing with the intention approaches. The trait approach definition according to Gartner (1988, p. 48) is an 'entrepreneur is assumed to be particular personality type, a fixed state of existence, a describable species that one might find a picture in a field guide, and the point of much entrepreneurship research has been to enumerate a set of characteristics describing this entity known as the entrepreneur'. But this approach got a lot of opposition from researchers because not all people that have similar

traits will be entrepreneurs. Liles (1974), for example, claims that people become entrepreneurs not due to personality or psychology but because of external factors.

Gartner (1988) disagreed with the trait approach, and he suggests that entrepreneurs should be looked at for what they created and not what they are. But Carland (1988) argues that both the trait approach and behaviour approach are important in determining entrepreneurship. Both are necessary and should not be neglected in future research studies to understand it. Even though Gartner (1988) and Carland et al. (1988) have different opinions on the approaches to understand the entrepreneurship process, but both agree that entrepreneurs and small business owners are different. Carland et al. (1988) accepted what Gartner (1988) proposed that the difference between entrepreneur and small business owners is that entrepreneurs create new firms.

Even though many agree that entrepreneurship can be learned, this begs the question of whether it is effective. Matlay (2008) argues that although various studies have been done in this field, they are still deficient in showing the effectiveness of EE toward actual results in entrepreneurship. Cheng et al. (2008) also point to the issue of effectiveness in EE.

2.2.2 Elements of entrepreneurship education

Fiet (2000a, p. 1) said, **'**There is an on-going debate in the entrepreneurship academy about whether we can actually teach students to be entrepreneurs. Its resolution is inextricably connected with our theoretical assumptions because they affect **how** and **what** we teach'. This point relates to teaching method and the content of EE.

Even though EE has been studied by various researchers, little effort has been focused on the elements inside EE itself. There are always questions of what to teach, how and by whom in EE. The question of *what* to teach relates to content, *how* relates to teaching method and *by whom* relates to the trainer or teacher. The outcome of EE as a dependent variable depends on

the combination of these three elements. There are diverse types of objectives, contents and pedagogical methods in EE (Fayolle, 2007; Fayolle et al., 2008). However, this study will not look at the answer in detail, but rather how those three elements impact the students through EE. Hynes (1996) proposed that education be used as an intervention to promote entrepreneurial culture, which this research attempts to do.

2.2.3 Content of EE

McMullan and Long (1987) point out that EE should include different content from business education since the objectives are different. One is to be an employee and manage other people's business while the other is to be a job creator. The course content according to Fayolle (2007; 2011) can be divided into three categories based on Hindle's (2007) and Johannisson's (1991) findings, which are professional, theoretical and spiritual dimensions. The concept of professional dimension is like the concept of knowledge. This concept answers the questions of know-what, know-how and know-who. The second dimension, which is theoretical, complements knowledge by including the theory related to the entrepreneurship process. The last dimension is spiritual, and it focuses on the issues of know-why and know-when.

In addition, Haase and Lautenschläger (2011) point to three things that can be taught in EE, which is entrepreneurship-related knowledge, soft skills and entrepreneurial conviction, also known as know-what, know-how and know-why. Compared to Fayolle, this concept lacks the know-why and know-when. An earlier study by McMullan and Long (1987) also promoted the inclusion of skills in EE.

To get more details of the content, see a study like Bechard and Toulouse (1998). Based on their analysis of specific objectives, they suggested content that includes 'market studies,

entrepreneurial skills, support system, management, growth strategies, technical orientation, business plan and discovery of idea' (Bechard & Toulouse, 1998, p. 329).

In 2010, Mwasawilba conducted a study based on literature, and the results showed that 18 common subjects were taught in the literature. Out of that result, Mwasawilba presented the nine most common subjects such as business planning, SME management, new venture creation etc.

In 2012, Neergaard et al. said that the problem with many practice by lecturers and what they try to teach using textbooks tend to be different than the real concepts on the students' side. Neergard et al. (2012, p. 2) quoted Martin (1981): "We need to think of content of learning in forms of what is in the students' minds rather than of what in the text book'. For this reason, it is important to understand the underlying concept from the psychological side. Neergard et al.(2012) propose understanding the psychological concepts behind that so the students can achieve the maximum benefit from what the course intends to do. Neergard et al. (2012) reported four basic concepts of entrepreneurship course content based on psychological foundations, which are behaviourism, social learning, situated learning and existential learning. The guidelines of the content are based on the concepts shown in the Table 2.4.

Table 2.4. Different concepts of entrepreneurship content by learning paradigm.

	Behavioral	**Social learning**	**Situated learning**	**Existential learning**
What	Skills and tool such as business plans simulation with regard to decision making	Mastery experiences Vicarious Experiences (role model)	Placements and internship or extended stays at student growth houses	Critical experiences that rock your boat

Source: Neergard et al. (2012)

In summary, the content of EE is varied. Based on the literature, decisions about what the content should be should follow the objectives of the course.

2.2.4 Outcome and objective of EE

The benefits of EE can be seen in the short and long-term, which does not just benefit the learner but also the community (such as new value-added products and job creation [McMullan & Long, 1987]). Just like the definition, the objectives and outcomes of EE also vary. Fayolle (2007, p. 55) stated that the outcome of EE is 'linked to the fulfilment of individuals, the improvement of entrepreneurial culture and increasing success rate of entrepreneurial actions and initiatives'.

Jones (2011) points out that there are eight purposes of entrepreneurship education. The purposes are to understand entrepreneurship and develop a mindset, better equip future owners of SMEs, promote alternative careers, inspire students, develop transferable skills, create an enterprising culture, creation ventures and create a safe learning environment. Based on these purposes, the main outcome of EE is not necessarily to be an entrepreneur, but to be aware of and use one's potential because entrepreneurial characteristics are also needed when working in the corporate sector.

In general, EE can be divided into two types, according to Laukkanen (2000), which is 'for entrepreneurship' and 'about entrepreneurship'. The learning *for entrepreneurship* can be defined as 'something concerned with learning and facilitating for entrepreneurship (what to do and how to make it happen by being personally involved)'. Meanwhile, learning *about entrepreneurship* is learning about entrepreneurship 'as social phenomenon'. Leino et al. (2010) separate the concepts of for, about and be into two categories, which are internal and external. They reported that the process of learning to be 'more entrepreneurial' is internal and learning about and being an entrepreneur is external entrepreneurship education.

Meanwhile a similar concept was also mentioned by Hindle (2007) in the terms '*teaching it* and *teaching about it'*. Teaching it refers to 'vocational area of entrepreneurship: practical components of a very applied area of knowledge'. Teaching about refers to 'teaching about the phenomenon itself' (Hindle, 2007, p. 107-109).

A study by Mwasawilba (2010) reported four categories for EE, which are 'educating for, educating in, educating about and educating through'. From his findings, to create entrepreneurs, the course should be catered to educating for. This category also covers the content of educating in and about. Meanwhile, if the students are already involved in entrepreneurial activities, the educating in will make them more entrepreneurial and create awareness about the phenomenon. Educating through helps students get the knowledge and competencies through the start-up process.

Earlier objectives by the researcher focused on the individual, meanwhile, in Jones and English (2004), the objective can be divided into personal development and enterprise development. The separation of those concepts is shown in the Table2.5.

Table 2.5. Contents of EE depending on main objective

Personal development	**Enterprise development**
Concept of entrepreneurship	Identifying and evaluating opportunities
Characteristics of an entrepreneur	Commercializing a concept
Value of entrepreneurship	Developing entry strategies
Creativity and innovation skills	Constructing a business plan
Entrepreneurial and ethical self assessment	Finding capital
Networking,negotiating and deal- making	Initiating the business
	Growing the business
	Harvesting strategies

Source: Jones and English (2004).

Bechard and Toulouse (1998) develop a didactic model that covers three types of objectives. The objectives are general, teaching and specific. The details and concepts are shown in the Figure 2.1 and Table 2.6.

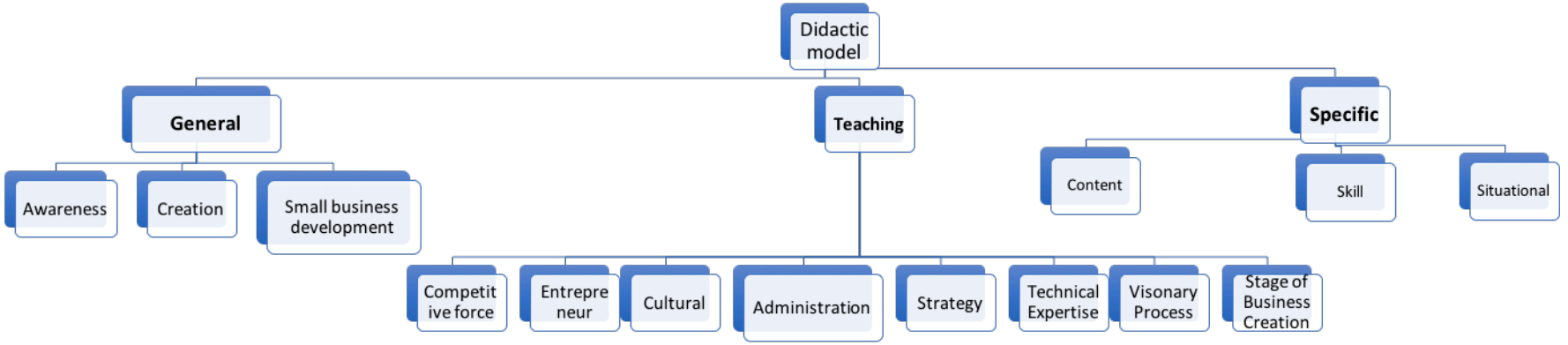


Figure 2.1. Didactic model (Bechard & Toulouse, 1998)

Table 2.6. Teaching objectives of entrepreneurship education

Teaching objectives								
Specific objectives	**Competitive forces**	**Entrepreneur**	**Cultural forces**	**Administration**	**Strategy**	**Technical expertise**	**Visionary process**	**Stages of business creation**
Content objectives	Understanding the elements that make up a market study	Understanding The characteristic of an entrepreneur	Understanding The sociocultural Factors that encourage Or limit the spirit of enterprise	Understanding the rudiments of managing small business	Understanding the elements involved in the launching, survival, and growth of a small business	Explaining the different technical skills that can lead to a trade	Understanding the identification stages of a business idea	Understanding the elements that make up a business plan
Skill objectives	Evaluating an already constructed market study	Identifying the main skills in a successful entrepreneur	Identifying a country's entrepreneurship support systems	Applying knowledge of management to solve a problem, real or simulated	Making a strategic Analysis of successful small business	Doing an internship in a business to appreciate different technical skills	Identifying several business opportunities in different industries	Evaluating a business plan that is already constructed
Situational objectives	Transferring knowledge gaines from a market study to a personal project	Making an assessment of each individual's entrepreneurial potential	Making contact with the support groups that are directly related to the personal project	Transferring knowledge of managing a small business To the personal project	Developing a Technique that will be the operational basis of the personal project	Developing a technique that will be the operational basis of the personal project	Exploiting a business opportunities that is consistent with the individual visionary process	Developing a business plan to describe the personal project

Source: Bechard and Toulouse (1998)

To add to the didactic model, Gibb (1993), cited in Fayolle (2011), pointed to the improvement for better learning in entrepreneurship through an entrepreneurial mode, which is a much better comparison to the didactical model according to both researchers. The comparison of the model as in the Table 2.7.

Table 2.7. Models of entrepreneurship learning

Didactical Model	**Entrepreneurial model**
Learning by the teacher exclusively	Mutual learning
Passive student, listener	Learning by doing
Learning by reading	Learning through interpersonal exchanges, debates and discussion
Learning through teacher feedback	Learning through feedback from different and numerous people
Learning in a schedule and organized environment	Learning in a flexible, informal environment
Learning without pressure of immediate objectives	Learning under pressure: objectives must be reached
Others' input is not encouraged	Learning by borrowing from others
Learn of mistakes and failure	Learning trough trials and errors
Learning by taking notes	Learning by solving problems
Learning through a network of expert teachers	Learning through guided discovery

Source: (Gibb ,1993)

Another essential point of EE is the target outcome of the course. Gibb (1996) mentioned six types of entrepreneurship course outcomes: motivated towards an entrepreneurial career, understand the processes of venture creation, develop generic competence, entrepreneurial behaviour, attitude and skill. A recent study by Martin and Lucu (2014) found that attitudes and skill development are the most important objectives of EE.

Besides objectives and outcomes, we need to look at the bigger picture, which is the types of programmes. Examples of types of programmes are shown in the Table 2.8.

Table 2.8. Types of entrepreneurship education programmes

Author	Year	Types of programme
Bechard and Toulouse (Europe)	1998	1. entrepreneurial education, 2. education for small business ownership and self-employment, 3. continuing small business education 4. small business awareness education.
Bechard and Toulouse (US and Canada)	1998	1. Train future entrepreneurs and help them to start up 2. Career education programme
Liñan	2004	1. entrepreneurial awareness, 2. education for start-up, 3. education for entrepreneurial dynamism 4. continuing education for entrepreneur.

Fayolle	2008	1. learning to be entrepreneurial 2. learning to be entrepreneur 3. creation of trainer or educator

For instance, Fayolle (2008) gave details of the key dimensions and concepts that were proposed as shown in the Table 2.9.

Table 2.9. Key dimensions and concepts in entrepreneurship education

Learning process	**Key dimensions**	**Relevant concepts**
Learning to become an enterprising individual	Entrepreneurship as a broad concept Spiritual dimension (know why and know when)	Entrepreneurial intention and self-efficacy Entrepreneurial orientation (applied at the individual level)
Learning to become an entrepreneur	Entrepreneurship as a broad concept Professional /practical dimension (know what, know-how and know who) Learning by doing	Learning by trying /emergence Bounded rationality/effectuation Cognitive models
Learning to become an academic	Didactical educational model Theoretical dimension	Entrepreneurship as a research domain

Source: Fayolle (2008, p. 204)

Just like other areas in entrepreneurship where there are no standards, Bechard and Toulouse (1998) point out common types of courses by three organisations, which are INTERMAN, UNAP and ILO. The definitions given by Bechard and Toulouse (1998) are shown in Table 2.10 below:

Table 2.10. Definitions of different types of courses

Types of programs	**Definitions**
Entrepreneurship awareness	General information programs on entrepreneurship and reflection on the career of entrepreneur
Business creation	Training in technical, human and managerial skills to generate personal

	income, create a business or create jobs
Small business development	Made to measure programs to answer the specific needs of owner/managers who cannot afford to pay specialist
Training of trainers	Program to develop educators' skills in consultations, education, and follow up on small business

Source: Bechard and Toulouse (1998).

2.2.5 Teaching method

According to Mueller (2011), from the educational science side, the effort to find an effective teaching method started in 1770 in Germany through the founding of the chair of pedagogy. Since then, it has grown to many areas. In the field of entrepreneurship, however, this is still considered new. Like the definition, there is also no agreement on what should be the standard teaching method, and there is no one size fits all teaching method (Fayolle, 2007; 2011). In addition, Hynes (1996) and Gibb (2002) proposed that the teaching method of EE should be different from business education because they have different objectives.

The pedagogy of EE normally follows the teaching objective (why) and content (what) and is constrained by the organisation (Fayolle, 2007). But Neergaard et al. (2012, p. 9) point out that the trainer's 'mental prototype' also influences the course content and structure used in the course.

Neck and Greene (2011, p. 57) said that 'teaching entrepreneurship requires teaching a method. The method is teachable, learnable, but it is not predicTable. The method is people dependent but not depend on a type of person. The entrepreneurship method goes beyond understanding, knowing, and talking and demands using, applying, and acting. Most importantly the method requires practice'.

Several attempts have been made by researchers to categorise teaching methods. An earlier study by Gartner and Vesper (1994) on EE since 1974 found that 'the standard entrepreneurship course includes venture plan writing, speakers, readings and cases'. Then, in 1987, McMullan and Long proposed that students become involved in experiential learning

with real-world entrepreneurs for EE to be efficacious. This is supported by Birch, who said that entrepreneurship can be learned by being an apprentice (Aronsson, 2004). The business school at that time prepares student to be employees instead of job creators. Birch says the skills needed most to be an entrepreneur were not taught in school, which include selling, managing people and product creation.

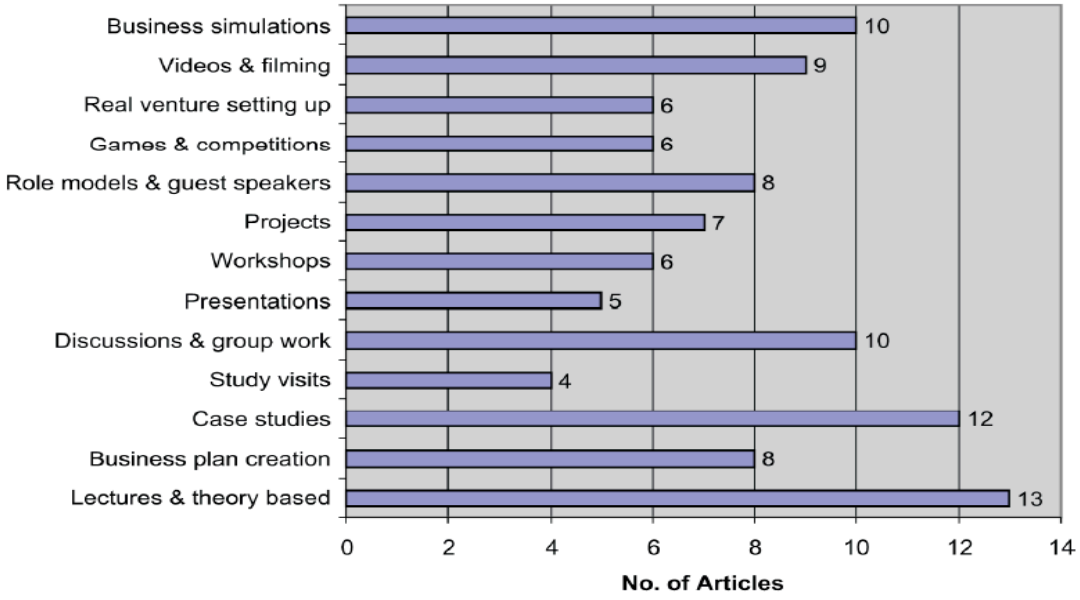
In 1994, McMullan and Vesper (p. 180), based on their study from 40 schools in the US, reported similar results that 'standard entrepreneurship course includes venture plan writing, speakers, reading and cases'. In addition, they found that common elements include the use of cases, speakers, lectures, text and particularly the writing of venture plans, both individual and teams, often followed by judging panels including outside professionals.

Two years later, Hynes (1996) categorised the teaching method into three groups, the didactic method, skill building and discovery method. The didactic method refers to conveying the knowledge to achieve the cognitive aspect, using lectures and textbooks. Skill building involves activity that intends to improve the student behaviour such as brainstorming and case studies. The discovery method is a learning process though experience, such as involvement in selling some product.

Previous studies were all about the method itself, but in Hindle (2007, pg 117) gave recommendations for entrepreneurship teachers to use six commandments, which are 'experientially, creatively, joyously, respectfully, adaptively and entrepreneurially' in teaching.

In 2010, Mwasawilba 2010 conducted a study based on literature and found that the teaching method can be divided into two categories, active (innovative method) and passive (traditional method). From this study, he illustrated the 13 most important teaching methods that have been used in EE, shown in the Figure 2.2.

Figure 2.2. Most important teaching methods



Source: Mwasawilba (2010)

Mueller (2011) argues that the teaching method is important to influence students' intentions. She proposed an explorative teaching method as the central EE teaching method. In addition, she highlighted the need to include emotional and experiential learning. The same paper highlighted three concepts, which are experiential learning, student-oriented leaning and changing behaviour and attitudes by addressing emotions. These teaching methods were selected because of the high 'explanatory towards the enablement of learning and towards changing attitudes and self-efficacy perceptions' (Mueller, 2011, p. 58). Caution needs to be taken because not all experiential learning will bring good results (Fayolle, 2007). Additional studies on teaching methods are presented in the Table 2.11.

Table 2.11. Additional studies on teaching methods

Method	Study
Classic	Benson, 1992

Action learning	Leitch and Harrison, 1999
New venture simulations	Clouse, 1990; Kelmar, 1992
Technology-based Simulations	Hindle, 2002; Low et al., 1994
Theory based activity approach	Fiet, 2000
Skills-based courses	Ulijn et al., 2004
Video role plays	Robertson and Collins, 2003b
Experiential learning	Daly, 2001; Sexton and Upton, 1987
Mentoring	Stewart and Knowles, 2003; Miettenan, 2006
Action and practice	Neck and Greene (2011)
Case study	Sassmannshausen and Gladbach, 2013
BMoE-games (Story-telling and Collaboration)	Johnsson et al., 2016

Besides the studies mentioned above, there are other studies related to teaching method such as Lourenco and Jones (2006), Carrier (2007) and Arasti et al. (2012). To add variety to teaching methods and effectiveness, Gibb et al. (2014) gave guidance to educators about 44 teaching methods for EE.

Psychology has many concepts that can be applied in entrepreneurship. Related to these arguments is the addition of a teaching method by Neergard et al. (2012). They introduced four psychological concepts that can be use in teaching entrepreneurship. Based on these concepts, they proposed guidelines to teach based on the Table 2.12 below without going into technical details; those who want to know more can see Neergard et al. (2012).

Table 2.12. Different concepts of entrepreneurship method by learning paradigm

	Behavioral	Social learning	Situated learning	Existencial learning

How	Reproduction	Vicarious, role model	Mentoring, reflection	Reflections

Source: Neergaard et al. (2012).

In general, as Biggs (1996) and Cheng et al. (2010) suggest, although there are many teaching methods, the method should be chosen to achieve the objective. To conclude this, Fayolle (2011, p.94) mentioned that 'teaching methods used in an entrepreneurship program relate to the How question of our framework, which follow the Why (objectives) and the What (contents)… Pedagogy is a means to achieve objectives. As soon as objectives have been set and specific constraints have been identified, method can be selected'. This study agreed with Fayolle (2011) that the pedagogy selected should be based on objectives and content, as pointed out earlier by Fayolle (2011). Fiet (2000, p. 101) said, 'The question for educators faced with ensuring student mastery is not, "What am I going to teach today?" but "What am I going to have my students do today?" And end the class by "our students leave talking about being entrepreneurs instead of about us"'.

2.2.6 The trainer / teacher

According to the European Commission (2014, p. 9), entrepreneurship teachers:

> *have a passion for teaching. They are inspirational, open-minded and confident, flexible and responsible — but also, from time to time, rule-breakers. They listen well, can harness and sell ideas and can work student- and action-oriented. They are team players and have a good network. They seek to close the gap between education and economy and include external experts in their teaching; focusing on real-life experiences. They always refer to the economic aspect of a topic; and business-related subjects play an important role in their classes — across the disciplines.*

In Europe, for example, ‘teaching entrepreneurship tends to be ad hoc’ (Martin & Lucu, 2014). A similar context was found by Hindle (2007) in McMullan (2003), who pointed out that ‘most instruction is conducted by ad hoc adjuncts’.

Birch said that entrepreneurship is ‘teachable skills, but I do not think the schools are teaching them and that the people teaching them are the right people’ (Aronnson, 2004, p. 289). In terms of who should teach, Hindle (2007) points out a lack of specific teachers in this field, and only in this field can be seen a lot of switching to entrepreneurship and be ‘accepted as norm’. Hindle (2007. P. 116) pointed out that committed teachers from different backgrounds will be sufficient if ‘they have knowledge worth imparting and unafraid to be themselves and show that self, wants and all, to students in a creative engagement to forge greater mutual knowledge’. Unlike other fields, educators can be people with no specific qualifications in the field. It could be academics or entrepreneurship. McMullan and Long (1987) gave an example like Babson College, which incorporates entrepreneurs as trainers.

Teachers’ roles are not just to convey knowledge but also to be role models (McMullan & Long, 1987). For that reason, selecting them is important since they will influence the students. McMullan and Long suggested that trainers should be people with entrepreneurial attitudes or spirits. They also point out that EE needs more ‘entrepreneurs in residence, team teaching and much more in way of guest appearances, in addition to project work on community ventures’.

Teachers’ role in entrepreneurship courses are different from business courses. In business, the teachers’ roles are geared more towards imparting knowledge to students. But for entrepreneurship, the teachers’ roles are geared more towards helping students channel new ‘ways of thinking about phenomena and events’ (Lobler, 2006, p. 28). Lobler (2006) points to the need to use the constructivist approach instead of the behaviourism approach in entrepreneurship.

Hindle (2007) said that in certain fields, the trainers are not expected to be practitioners. He gave the example of the criminology field in university. It would be a problem if the lecturer position needed to be someone with criminal record only. This is similar for gynaecologists; it is not a gender specific occupation. If it is based on experience, then the job would be limited to females.

In the entrepreneurship field, even though having academics with entrepreneurial experience is a benefit, in reality, not many exist. Hindle (2007) proposed that a team of both an academic and practitioner would be valuable. In his opinion, 'the great fundamental ingredient in great entrepreneurship education is, as in every discipline, a passionate teacher addressing students with open minds and together working on the mutual imaginative development of knowledge: a kind of reciprocal apprenticeship'. Mueller (2011) also supported the role of a trainer in EE.

2.2.7 Entrepreneurship education in university

According to Drucker (1985), modern university itself is part of the entrepreneurship history. It was started in 1809 by Humboldt, the University of Berlin with two purposes: to take the 'to take intellectual and scientific leadership away from the French and give it to the Germans; and to capture the energies released by the French Revolution and turn them against the French themselves' (Drucker, 1985, p. 23). This was the starting point of 'university as a change agent' (Drucker,1985, p. 23). This idea was then taken by the United States. Katz (2003) tracked entrepreneurship education in America starting in 1876. The earliest entrepreneurship course was taught at Harvard in 1947 with 188 students by Myles (Katz, 2003). In Asia, on the other hand, entrepreneurship classes started much earlier in Japan. The course was taught by Shigeru Fijii in 1938 at Kobe University (Alberti et al., 2004).

Moving forward, entrepreneurship education, as mentioned in Vesper and Gartner (1994;

1997), Dana (2001) and Katz (2003), shows tremendous growth around the world. Universities in the US have been the pioneer in this field since there has been much demand (Alberti et al., 2004). As mentioned earlier, EE in the US has been tracked by numerous researchers. In contrast, no official record to track EE was kept in Europe or Asia (Katz, 2003).

The reason for the increase in EE is demand by students, government and the education field (Kourilsky, 1995; Jack & Anderson, 1999; Fayolle, 2007). Gibb (2002) points that the increase was due to globalization. EE plays an important role in creating entrepreneurial graduates (Volkmann et al., 2009).

EE is important in university because of increasing demand by countries to produce entrepreneurs for economic reasons (Nabi & Liñan, 2011). According to Charney and Libecap (2000), graduates with entrepreneurship education increase their probability to generate more income, be involved in venture activities, bring technology from university to small firms and contribute to the growth to firms.

The governments in many countries look at EE as an agent to create jobs and help with economic growth. For instance, Kourilsky (1995) suggests that entrepreneurs are the heroes in America, especially during the crisis period between 1987 and 1992, when they played the role of job providers. The majority of job creators are companies with fewer than 20 employees. As mentioned earlier, the big companies lost jobs and were replaced by small companies. According to Scarpetta et al. (2010), the job market for youth suffered badly, especially after the global financial crisis. In just two years, the youth unemployment rate became 19%. This also happened in Malaysia. According to Gibb (1996), who gave the example of the government of Malaysia using the university as a medium to create entrepreneurial graduates in an effort to solve problems such as dependence on government for a career after graduation and unemployment. For this reason, EE in universities receives a

lot of support from governments and companies. For example, Katz (2003) mentioned the growth in entrepreneurship endowment. Since 1987, the endowment has already grown more than 440 million USD.

Addressing the question of where EE should be placed, a study by Gartner and Vesper (1994) found that EE has grown tremendously in business school since the survey was started in 1974.

Even though entrepreneurship gained popularity in business, there was also debate about whether business school was the right place to teach (Gibb, 2002; Hindle, 2007). Initially, EE started in the business school, but has grown to other disciplines.

Gibb (2002) argues that business school is not the right place to teach entrepreneurship and points to the importance to make it different from business education philosophy. Furthermore, Hindle (2007, p. 110) agreed that university is 'an appropriate place to study entrepreneurship but only for people who want to consider phenomenon imaginatively rather than mechanistically'. He also added that university is a suitable place if the 'learning experience [is] unique' and the 'program to provide an experience that students can have nowhere else'. Hindle (2007, p. 114) also said the best place in university to teach entrepreneurship is not limited to the business school. The important criteria are 'wherever there is a passionate desire to teach them well' and 'not put it anywhere where imagination is likely to be stifled'.

A number of researchers have pointed out that business school curriculum is tailored more towards development of employees instead of job creators. Some other faculties that are professionally-oriented, such as engineering and law, are more stringent and have similar flaws to the business school (McMullan & Long, 1987).

The reason for growth is other disciplines also need entrepreneurship in their future careers and fail to see that (Hynes, 1996). For example, if a doctor opens his or her own clinic,

then he or she does not just need to know to cure people but also to handle business. Similar cases apply to lawyers and architects who open their own firms.

Martin and Lucu (2014) proposed that EE should be taught not just to business students but to non-business students because the entrepreneurship mindset and skills are useful in daily life. They also reported that multidisciplinary EE is more effective than teaching to one field only, such as business students.

2.2.8 Different approaches to evaluation

Approaches to measure courses also vary. For example, McMullan and Long (1987) argued that the measurement of success should be based on the impact the graduates have on society. In 1996, Hynes proposed that the impact of EE can be measured in terms of personal growth and knowledge. Hynes (1996) disagreed with a measurement based on the number of business start-ups. Unlike other disciplines, EE courses cannot be measured based on the grades that the students earn or whether or not they graduate.

A recent study by Duval-Couetil (2013) showed that there are four types of assessment for students, which are direct assessment, indirect assessment, formative assessment and summative assessment. The summary of these assessments are in the Table 2.13.

Table 2.13. Different assessment types

Assessment type	**What is being measured**	**Type of test**
Summative	Given periodically to determine what students know and do not know at a particular point in time	End of chapter quiz or test Midterm or final exam Grade assigned to final project University generated course evaluation
Formative	Part of the instructional process and provides information needed to adjust teaching and learning in real time	Observation Questioning Self and peer assessment Early or mid-course evaluations
Direct	Analysis of reported perceptions about mastery of learning outcomes by students, faculty, or others	Survey Interview Focus group

Indirect	Based on behaviours or products that demonstrate mastery of learning outcomes	Standardised test Locally developed test Assignments and activities Portfolios

Source: Duval-Couetil (2013)

The same study also gave an example of assessment in EE as in the Table 2.14.

Table 2.14. Examples of assessment types in entrepreneurship education

Course-Level Assessment	Student and course evaluation	Methods used to assess innovation and entrepreneurship in an engineering course	Wang and Kleppe, 2001
	Self-awareness	Examples of how web-based self-evaluations were used as a basis for formative assessment and discussions in a new venture creation course	Human, Clark, and Baucus, 2005
Program-Level Assessment	Demand for entrepreneurship education	Student dispositions toward entrepreneurship education, occupational aspirations, motivations for becoming an entrepreneur, and perceived barriers to business start-up	Shinnar, Pruett, and Toney, 2009
	Interest in entrepreneurial careers	Student attitudes toward entrepreneurship as a career path in the field of family and consumer sciences	Frazier & Niehm, 2008
	Impact of entrepreneurship education	Differences in attitudes and outcomes among engineering students who were and were not exposed to entrepreneurship education	Duval-Couetil, Reed-Rhoads, and Haghighi 2012
	Impact of entrepreneurship education	Difference in retention, grade point average (GPA), and entrepreneurial activity among engineering students in an engineering entrepreneurship program	Miller, Walsh, Hollar, Rideout, and Pittman, 2011
	Longitudinal impact	Contribution of entrepreneurship education to the creation of new ventures, existing firm growth, income, and job satisfaction among	Charney and Libecap, 2003

		business school alumni	
Focus instrument	Entrepreneurial Self-Efficacy Construct (ESE)	Predicts the likelihood of an individual being an entrepreneur by asking respondents to indicate their degree of certainty in performing 26 tasks in the categories of marketing, innovation, management, risk taking, and financial control	Chen, Greene, and Crick 1998
	Entrepreneurial Self-Efficacy Construct (ESE)	Refines ESE construct to better differentiate between entrepreneurs and managers	De Noble, Jung, and Ehrlich, 1999
	Entrepreneurial Self-Efficacy Construct (ESE)	Multidimensional measure to advance the understanding of Entrepreneurial Self-Efficacy (ESE) and its effect on venture intentions	McGhee, Peterson, Mueller, and Sequiera, 2009
	Venturing and technical entrepreneurship self-efficacy	Engineering students' confidence in their venturing and technology applications skills, based on authentic tasks or situations they may encounter in the workplace	Lucas, Cooper, Ward, and Cave, 2009
	Escan	Self-assessment based on 114 items used to measure students' entrepreneurial competencies.	Oosterbeek, Van Praag, and Ijsselstein, 2010
	Entrepreneurial orientation	Measures firm performance via top managers' responses based on survey items related to innovativeness, proactiveness, and risk taking	Covin and Slevin 1989
	Entrepreneurial intention	Attitudes toward self-employment	Kolvereid 1996; Souitaris, Zerbinati, and Al-Laham 2007
	General Enterprising Tendency (GET and GET 2)	Entrepreneurial tendencies, including need for achievement, need for autonomy, creative tendency, risk taking, and drive and determination	Caird, 1991, 2006

	National Collegiate Inventors and Innovators Alliance Entrepreneurship Inventory	Engineering students' knowledge of or familiarity with a list of 105 terms and concepts derived from a preexisting taxonomy	Shartrand, Weilerstein, Besterfield-Sacre, and Olds, 2008

For this study, the approach falls under the direct category, where it would analyse the students' learning outcomes after the entrepreneurship course in terms of skills, traits, competency and intention.

2.3 Entrepreneurial intention

Entrepreneurial intention is one of the major topics in EE. Intention is the central component in the motivational process (Tubbs & Ekeberg, 1991). It is 'a cognitive representation of the objective (or goal) one is striving for and the action plan one intent to use to reach that objective' (Tubbs & Ekerberg, 1991, p. 181). It belongs to the psychology domain (Prasad & Raut, 2012). According to Ajzen (1991), intention is the best predictor of behaviour.

Bird (1988, p. 442) defined intention as 'a state of mind directing a person attention (and therefore experience and action) toward a specific object (goal) or a path in order to its achieve something (means)'. Katz and Garner (1988, pg 431), on the other hand, define intention as 'agents seeking information that can be applied toward achieving goal toward creating new organization'. In a similar paper, they point out that intention based on literature came from the 'process and cognitively oriented theorist'.

According to Krueger (2009), the entrepreneurial intention term was first used by Shapero (1982) when the entrepreneurial event model was created. Intention is an indication of a person's readiness to perform a given behaviour, and it is considered the immediate antecedent of behaviour. The intention is based on attitude towards the behaviour, subjective

norm and perceived behavioural control, with each predictor weighted by its importance in relation to the behaviour and population of interest (Ajzen, 1991).

Krueger (2009, p. 55) said that 'entrepreneurial intention is regard as intent to start a business, to launch new venture'. We will use Krueger's (2009) definition of intention for this study. Intention helps to guide 'goal setting, communication, commitment, organization, and other kind of work' (Bird, 1988, p. 442). Among the reasons why entrepreneurial intention is important is because, according to the GEM Singapore report (2012), entrepreneurial intention does have a positive correlation with GDP growth.

2.4 Entrepreneurial process

Over the past three decades, there have been a few models that have been developed or proposed by researchers related to a career as shown in the Table 2.15 below. However, among the top entrepreneurial models are the SEE model and TPB (Prasad & Raud, 2012).

Table 2.15. Most common models used in entrepreneurship process research

Model	Authors	Year
Theory of Reasoned Action	Icek Ajzen, Fishbein	1975
Shapero Model of Entrepreneurial Event (SEE)	Albert Shapero, Sokol	1982
Model of Entrepreneurial Intentionality	B. Bird and M. Jelinek,	1988
Theory of Planned Behaviour	Icek Ajzen	1991
Status Choice Model of Organisation Formation	K.E. Learned	1992
Model of Employment	Jerome A. Katz	1992
Entrepreneurial Attitude Orientation	Krueger, Carsrud	1993
Entrepreneurial Potential Model	Krueger, Brazeal	1994
Davidsson Model	Davidsson	1995
Integrated Behaviour Model	Fishbein	2000

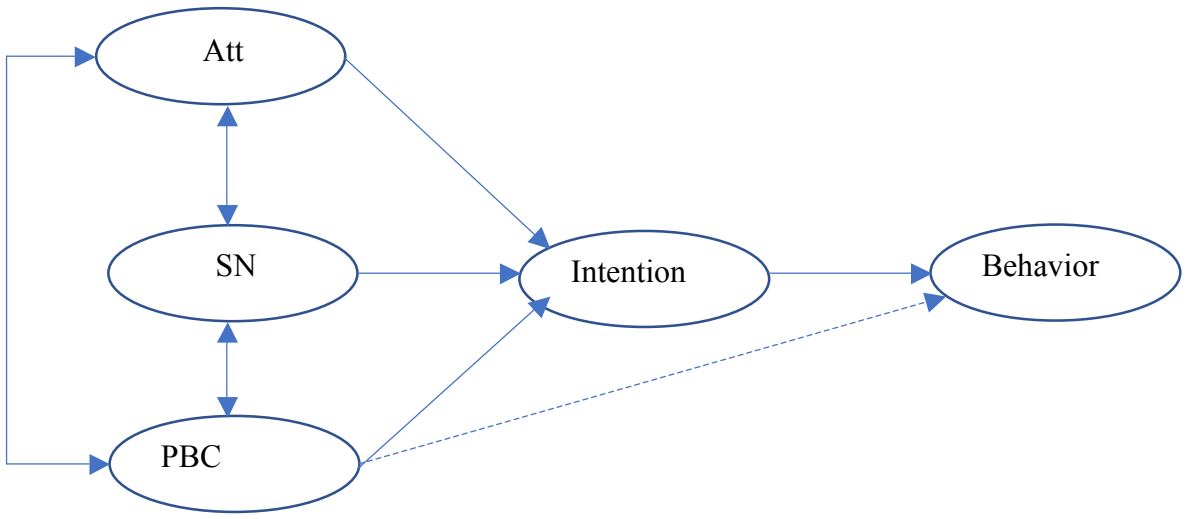
Krueger (2003) points out four advantages of the intention models. Firstly, it can be used as an assessment of the impact which was also the purpose for this study which is to study the impact of EE.

The second benefit is the robustness of the model. The third one is the predictive power and the fourth, which is the most important according to Ajzen (1991), is that intention is the most important to predict behaviour. Many theories were developed and some were tested by other researchers. For instance, SEE was tested by Krueger (1993), and Bird's Entrepreneurial Intentionality model was tested by Boyd and Vozikis (1994). For this study, TPB will be summarised and one potential model for future study will be highlighted.

2.4.1 Theory of Planned Behavior (TPB)

TPB was developed by Ajzen (1991). This theory was an improvement from TRA, and Ajzen added the Perceived Behavior Control (PBC). Three independent variables for TPB are attitude (Att), subjective norm (SN) and Perceived Behavior Control (PBC). The TPB model tries to explain the behaviour through intention. Intentions are important predictors of behaviour. The TPB model as in Figure 2.3. The details of this theory and why it was chosen will be explained in the next chapter.

Figure 2.3. Theory of planned behaviour



Source: Ajzen (1991)

2.4.2 Integrated Behaviour model

This new model was a further development by Fishbein (2000). According to this model, there are three constructs that affect behaviour in addition to intention, as shown in Figure 2.4. The skills and environmental constraint were added to the moderator of behaviour (Fishbein, 2000). However, the most important construct in determining this decision is intention. Fishbein (2000) says this model is also suitable to be used in any culture or country. The majority of literature reports that this theory is used in health-related messages but has not been used widely. For example, it was used in the earliest usages in HIV prevention study.

This model has three perceptions of antecedents of intention: attitude, perceived norms and self-efficacy. Attitudes towards the behaviour lead to a person evaluating his or her feelings, whether favourable or not, when executing a behaviour. Perceived norm refers to the social environment influence on behaviour. There are two types of social influences, the injunctive and descriptive. The injunctive refers to the support of the social surroundings a person has, for example, family or friend. The descriptive norm refers to the appraisal of the performance of that behaviour by the social environment. Self-efficacy refers to the person's feelings about his or her capability performing that behaviour. This is different than the skills that refer to actual competence. No usage was found within the entrepreneurship field.

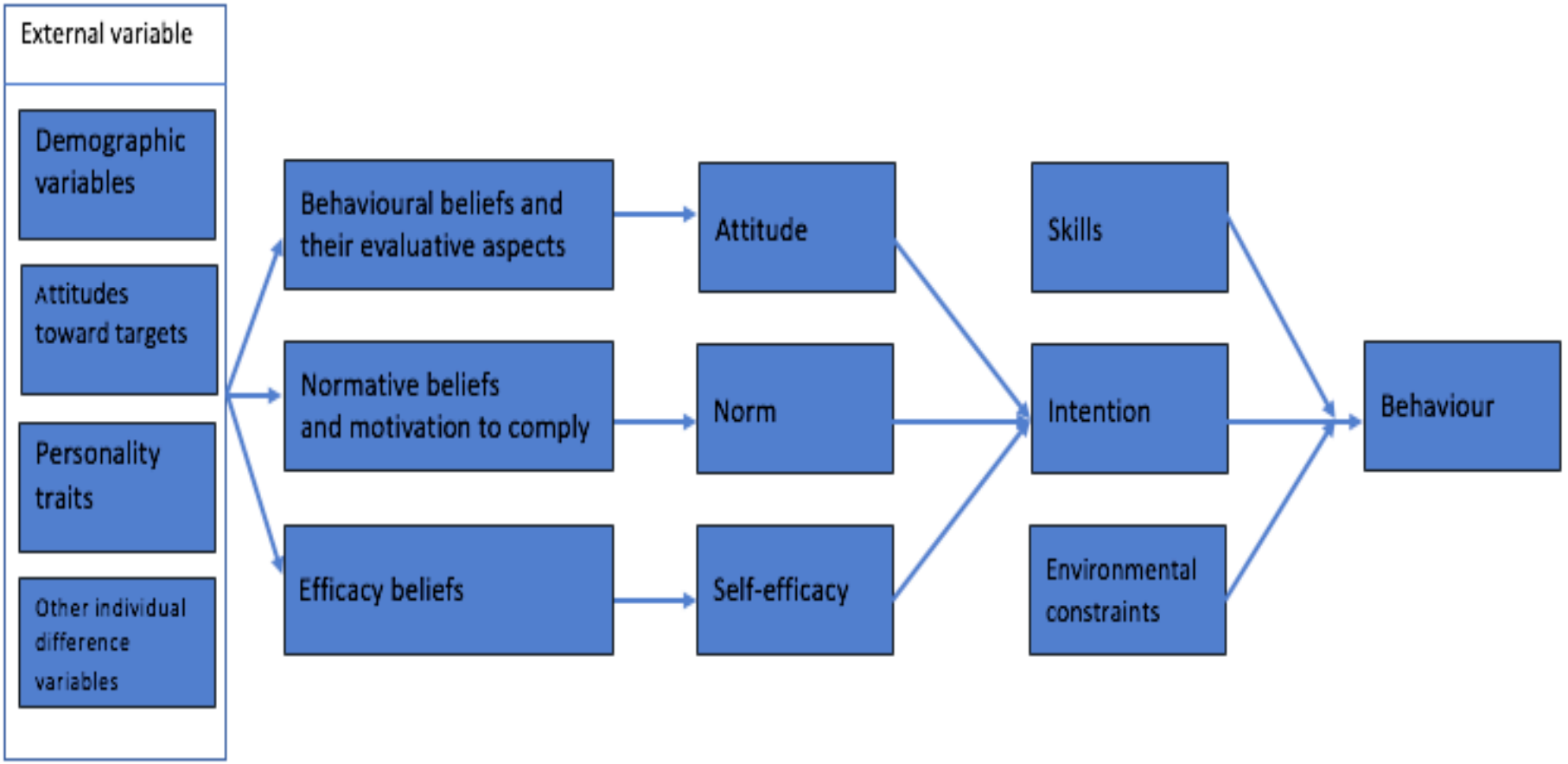


Figure 2.4. The integrated model of behavioural prediction (Fishbein, 2000)

2.5 Entrepreneurship – The context of Malaysia

Since the study is carried out in a university in Malaysia, there is a need to include history in order to understand the problems faced by the Bumiputera group. It is necessary to look at the root cause where the problem started and why the Malaysian government took the action it did. This section will explore the root cause from a historical point of view through recent years. This section also introduces the entrepreneurship education in Malaysia and the National University of Malaysia (UKM).

2.5.1 Brief introduction about Malaysia

Malaysia is a country located in the Southeast Asia. The country has 329,847 km2 of landmass, which consists of 11 states in Peninsular Malaysia, two states in East Malaysia and three territories. The states are Kedah, Penang, Perak, Selangor, Melaka; Negeri Sembilan, Johor, Pahang, Terengganu, Kelantan, Sabah and Sarawak. The capital is Kuala Lumpur and the administrative centre is Putrajaya, which is located in Selangor. Figure 2.5 shows a map of Malaysia. The weather season is only the dry and wet season.

The national language is Malay and English is the second language. The ruling political party is Barisan Nasional, which is led by UMNO (United Malays National Organisation). Malaysia received its independence from the British in 1957. The current prime minister is Mohd Najib Tun Razak, who is the 6th prime minister as well as the current President for UMNO.

In terms of the ease of starting a business, Malaysia currently ranks 23 out of 181 countries according to the World Bank (2017). Among the reasons is that starting a business in Malaysia only takes six days, which was previously 37 days in 2002.

Figure 2.5. Map of Malaysia

According to a census conducted by the statistic department, in 2010, Malaysia had 28.3 million people, and 91.8% are Malaysian citizens. The population based on ethnicity is dominated by the Malay population, which is 67.4%, followed by 27.6% Chinese, 7.3% Indian and 0.7% others. In March 2017, the Malaysia population is estimated at 31.7 million people (Malaysia Statistic Department). In 2015, females comprised 48.4% of the population (EPU, 2017).

According to the 2010 census, the total workforce is 11.4 million people. The labour participation rate is 67.6%. Based on the same study, 16% of the work population is self-employed. The female labour force was 38.3% as at 2015 (EPU, 2017). The unemployment rate was 3.5%, and the literacy rate in 2015 was 95.1% (EPU, 2017).

2.5.2 The Education system in Malaysia

2.5.2.1 Education system after independence 1957

Before independence, Malaysia was known as British Malaya. One of the impacts of colonisation in Malaysia was the education system. The education system under colonial rule was divided into a national school and secular education. Each ethnic group was allowed to have its own education system. Before independence, there were five types of schools: the English school, Malay School, Chinese School, Indian School and Religious School. A new education system replaced the British system after 1961.

The new education system started with the implementation of the National Education policy. The policy was developed with the purpose of national integration and was based on the Razak report (1956) and the Rahman Talib Report (1960), which was converted to the Education Act 1961. After that, Malaysia standardised its education system so all schools had similar curricula and examination systems. The Malay language and English are compulsory subjects in all schools. Under the new system, the English schools were demolished.

Under the new education system, the Malaysia compulsory education system starts at the age of 7 years old. The government provides 11 years of free education, and 9 years is the basic compulsory education. Most of the people go to the national school provided by the government. The age for the schools is shown in Table 2.16.

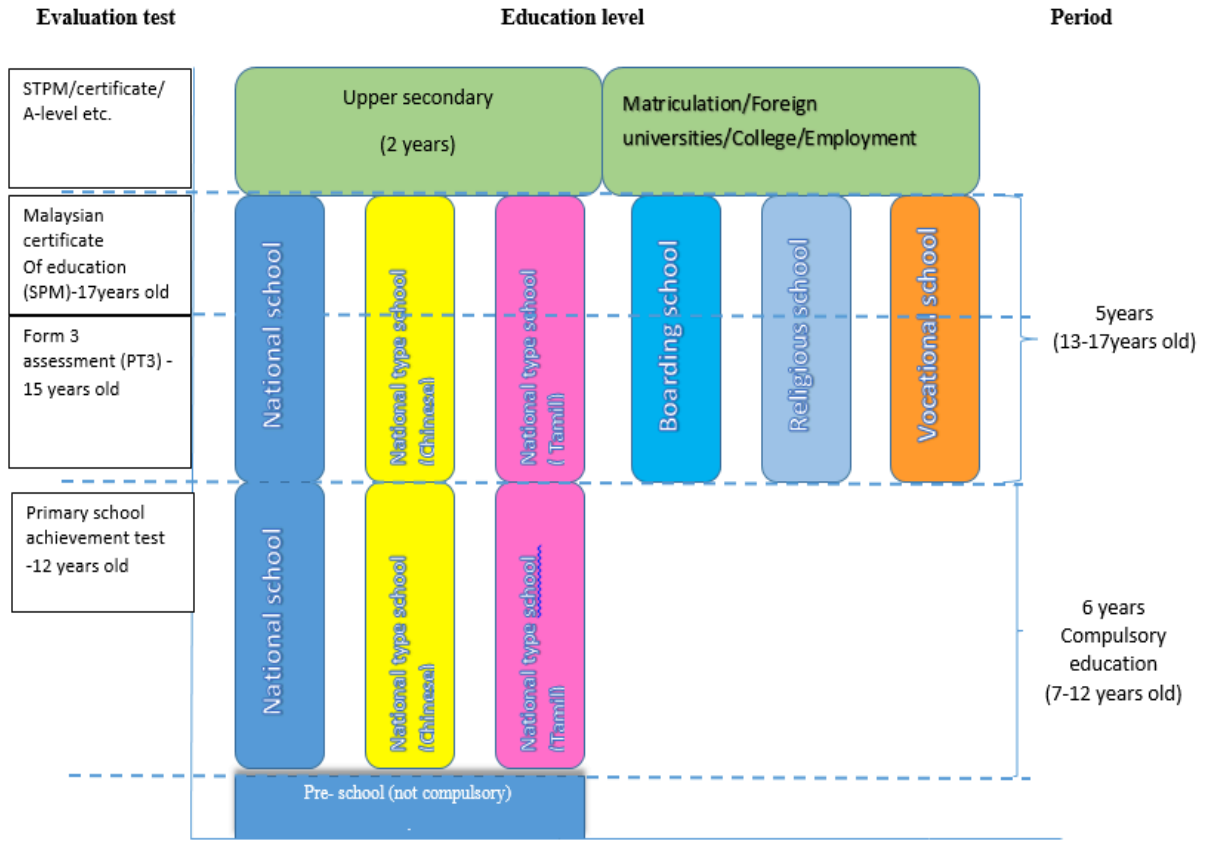
Table 2.16. Education levels in Malaysia

Age	Education
7-12	Primary
13-17	Secondary
17-19	Upper secondary

	/College/Matriculation/Pre-university
Ages varied previous education	University

The educational years and school system is shown in Figure 2.6. The number of years at university will depend on the courses taken by the students. The government expected that through this national education policy, the people should be encouraged to become more involved in entrepreneurship and not just dependent on the government.

Figure 2.6. The education system and age



2.5.3 The entrance of the Chinese ethnic group

The Malays have been fully involved in economic activities since the Malacca sultanate in the sixteenth century. Jones and Wadhani (2006) mentioned that Malay entrepreneurs were strong in the seventeenth century, but the entrance of the Chinese people and impact of colonization by the British to the Malay kingdom made them lose their position. The Chinese merchants and outsiders were preferred by the rulers to avoid a political threat.

The Chinese traders were among the earliest merchants who came to Malay (Omar, 2006). Initially, they were only middlemen for the products from China and brought the local products back to China (Mahathir, 2008).

The monopoly of business by the Chinese people in East Asia started in the sixteenth century when the merchants from European came to trade, and the Chinese people became the middlemen for all business activities between Europeans (Mahathir, 2008; 2012). As their business grew, their influence increased and they started to offer service to all the kings in the Malay kingdom during that period. Due to their efficiency in handling business activities, the kings gave them licenses to do their business and to collect taxes on behalf of the king. Because of the Chinese entrance, the Malays' position was disturbed and they lost their economic activities through the domination of business by the Chinese people.

Even though there were other traders during that time such as Arabs and Indians, their presence never became a threat to the local people. Compared to the Chinese, the traders from the Middle East and India integrated with the locals by marrying them and adapting to the local culture. The Chinese, on the other hand, came with their own people and only married each other, which did not assimilate them into the local culture. Their numbers increased much more when the British ruled the Malay lands, which has had many negative effects on the Malays in terms of socioeconomic and political issues even today from the Malay point of view. This is the difference between Malaysia and the neighbouring countries such as

Indonesia, where the Chinese population was much lower and they assimilated with the local culture.

2.5.4 British colonialism and its effect

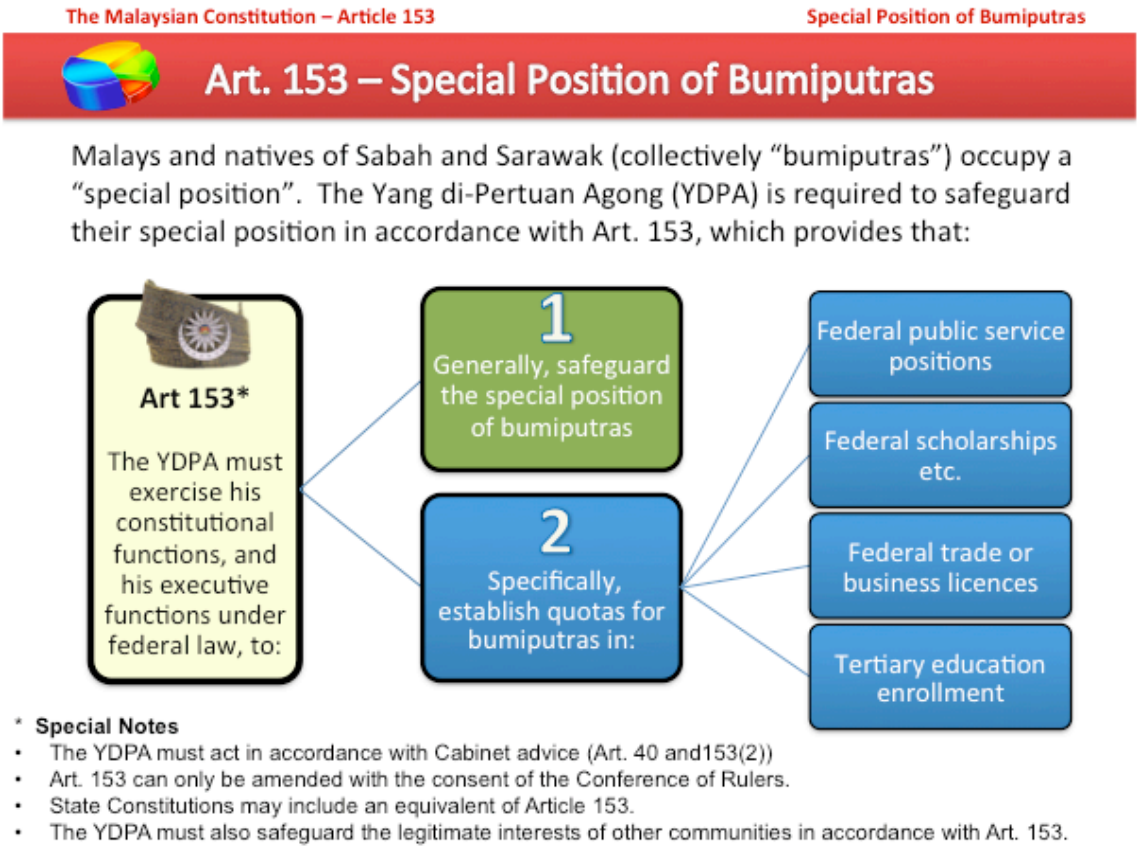
British colonialism started in the eighteenth century when the British took over Penang (1786), Malacca (1795) and Singapore (1819). During the colonial period, the land was called British Malaya (Siddique & Suryadiyata, 1981). The British brought immigrants from China and India for labour. As a result, the Chinese population increased dramatically, and in certain places they became the majority. In Penang in 1858, for example, the Chinese had a population of 24000, which outnumbered the Malays by 4000; meanwhile, in Singapore in the 1860s, the Chinese made up 65% of the population (Omar, 2006). In the same period in Melaka, even though the Malays dominated the population, the economic activities were already controlled by the Chinese (Omar, 2006). The census in 1931 showed that the number of Chinese was 39% of the population compared to the Bumiputera, who were 44.7% of the population (Siddique & Suryadinata, 1981).

The British have close relationship with the Chinese in terms of economic activities since they are more productive and bring more economic benefits compared to the Malays (Omar, 2006). The Malays, on the other hand, were promoted and fostered to be peasants (Siddique & Suryadinata, 1981), but there were also attempts to incorporate the Malays into the upper class through participation in the civil service. Even though there were differences in terms of economic activities, the indigenous and non-indigenous groups in the end cooperated in the effort to gain independence from the British.

In 1957, Malaya got its independence from the British. As agreed among the parties before independence, the Malays will receive special privileges after independence as an exchange for citizenship for the Chinese and Indian population. This agreement was later

incorporated into the Malaysia constitution article 153. The content of article 153 is shown in Figure 2.7. After gaining independence from the British, the British Malay were called the Federation of Malaya and were dominated by the Chinese, who comprised 44.2% of the population from a total of 7.2 million people, followed by 42.9% Malay, 10.6% Indian and 2.3% other (Omar, 2006). The colonisation by the British did not just change the demographics of the population but also the economic activities, especially for the Malay natives. Under colonialism, immigration from China and India was encouraged by the British. A similar case happened in Indonesia, but it was not as significant. For example, data in 1934 showed the Chinese in Indonesia, also known as the Dutch East Indies, in that period only accounted for 2% of the population compared to 97% of the indigenous people (Siddique & Suryadinata, 1981).

Figure 2.7. Source: Wikipedia (article 153 of the constitution of Malaysia)



As the population increased, the British ruled by 'divide and rule policy', where the economic activities began to be identified according to racial lines. The Malays soon lost their involvement in economic activities such as involvement in business, work in high skill areas and non-skilled occupations. Eventually, the Malays had to sell their land and move to the village because of the increased cost of living in urban areas except for those who worked for the government. As a consequences of this, the Malay also received little education since English schools that were provided by the British were only available in urban areas. The other problem faced by the Malays was the unavailability of secondary school. According to Haji Din (1992), the Malay secondary school only became available after World War 2.

Through British education, only the English school graduates can proceed to higher education, either domestic or overseas. The Chinese school graduates also went overseas to pursue higher education (Haji Din, 1992). Meanwhile the Malay had no alternative but to receive low education.

Under the 'divide and rule' policy, the Chinese were involved in high value economic activities such as commerce, mining and manufacturing, and lived in urban areas. The British also entrusted the Chinese to do tax collection on their behalf. On the other hand, the Malays were involved in low value agricultural economic activities in rural areas such as farmers and fishermen. The Indians worked in agriculture plantations such as rubber estates, and a small percentage worked in the cities doing professional work such as law.

Among other reasons why the Malays stayed in the village was because of the regulation by the British. For example, they limited the number of fruits and coconut that could be planted on the land owned by the Malays. Rubber, on the other hand, could not be planted except with a high rate of rent. Because of these regulations, their income was just enough for self-sufficiency and, as a result, they could only afford to live in rural areas (Mahathir, 2008).

When the British lost to the Japanese during World War II, even the Malays who worked with the British government lost their jobs and started to become involved in small business. However, most of them thought it was temporary and they did not want to surpass the business monopoly by the Chinese. In their minds, they preferred to work with the British after the war was over. Even though there were a few Malays who wanted to penetrate the Chinese business through political power, after World War II their intention vanished as the British planned to establish the Malayan Union. The Malays were busy against the establishment of Malayan Union which was the new colonial structure that replace British Malaya (Mahathir, 2008).

The Malays started to become involved in business again when they gained political power after independence, however, their lack of experiences in business and the changes in business trends made it hard for the Malays to penetrate the Chinese monopoly. The Chinese, on the other hand, took over all the business that was not done by the British. The Chinese controlled almost all types of business in Malaysia in the 1960s (Chin, 2003). According to records, in 1954 there were 58005 businesses owned by the Chinese, 12,644 owned by Indians and 7878 owned by the Malays (Yaacob, 1981).

Among the problems that the Malays faced during that period was the lack of capital and competition from non-Malays (Mahathir, 2008). Even though there were banks during that period, the majority belonged to the British and Chinese and none wanted to lend capital to the Malays. As a result, a Malay bank was established, but more in the spirit of nationalism than professionalism, which lead to it closing. As the tension rose, the Malays started to demand independence from the British while the Chinese and Indians asked for the right to nationality.

To reduce the political tension, the British High Commission established RIDA (Rural Industrial Development Authority) in 1951 with the purpose to give assistance to the Malays

in their traditional business and give assistance for capital and technical advice (Mahathir, 2008).

Unfortunately, according to Mahathir (2008), RIDA was only a strategy by the British to make the Malays tolerate the political issues, but the real intention was not to help the Malays economically. The Malays actually did not receive the assistance that they deserved, and as consequence, it changed the Malays' thinking about the importance of economics. Under RIDA, even though the British allocated money to help the Malays, when it came to the application, they were asked whether they had experience in the business that they wanted to do. Obviously based on the situation in that period, the Malays lacked experience in business, so most of the loan applications were rejected.

As the Malays started to protest, the British offered that RIDA be put under control of a Malay leader. However, RIDA did not provide the capital to those that needed it and, as a result, became a failure for its function.

2.5.4.1 May 1969 racial riots—Turning point for Bumiputera economics

The country gained its independence from the British on 31 August 1957. Then, in 1963, it was joined by Sabah, Sarawak and Singapore to become the Federation of Malaysia. The Bumiputera (Malays in the peninsula and indigenous people in Sabah and Sarawak) are protected and received special privileges under articles 153, 160 and 161A of the constitution of Malaysia. When Singapore was part of Malaysia, the Chinese population in Singapore made them the majority (Siddique & Suryadinata,1981). In 1965, Singapore separated from Malaysia because of different political ideologies.

After independence, the government totally restructured the system and replaced the foreign workers with local people (Mahathir, 2008). The Malaysian people were given

chances to get involved in business by the offer of a contract from the government that was previously monopolised by the British during colonialism (Mahathir, 2008).

Disappointingly, because of the lack of entrepreneurial culture and experience by the Bumiputera, the contracts were taken over by the Chinese because they had a stronger background in business and were more competitive. They started to replace the British and monopolised all business at all levels. The Chinese business styles have become a barrier for the Malays to compete with them.

The Chinese business practice started with a deal with the family, followed by people with the same dialect or same background or home country, and finally the same races. For example, since the Chinese controlled all levels of business, they could manipulate the prices and sell higher to the Malays traders, which caused the selling price from the Malays traders to become uncompetitive compared to Chinese traders. The influence of the Chinese got richer and stronger, which led to economic and political tensions among the Malays and Chinese.

Although the Bumiputera received privileges and protection from the government, but it was insignificant, as pointed out by Haji Din (1992). This was due to the private sector requirement that either English school graduates or Chinese school graduates worked for the Chinese companies since the Malay had little education. The graduates from the Malay schools did not just have employment problems but also had higher education problems because English was the standard medium for employment and higher education. Only a small percentage of the Malay people had English education. The education issue had blocked the Malays from seeking better living standards and future improvement (Haji Din, 1992).

The special privileges for the Bumiputera were also questioned by the non-Bumiputera. Meanwhile, the Bumiputera, especially the Malay, were dissatisfied with their economic conditions and their education (Haji Din, 1992). The racial tension reached its peak when the

Chinese opposition party won the election in Selangor. This led to the Malays worrying that their economic situation would become worse. This racial tension finally led to a tragedy in the history, which is called the 13 May tragedy.

The tragedy of 13 May 1969 was the result of an imbalance of socioeconomic activities that had a negative impact on the stability of the country. This is the worst incident that occurred between the Malay and Chinese; at least 196 people were killed in this racial incident. The country was declared a state of emergency, and it was temporarily governed by the National Operation Council (NOC) until 1971. After that tragedy, the government, through the NOC, established a New Economic Policy (NEP) in 1971 to restructure the society and resolve the problems. The government believed the people could be united through socioeconomic balance.

2.5.4.2 New Economic Policy (NEP) for national unity

Preceding implementation of the NEP in 1971, the only government target was economic growth, and it did not focus on correcting the socioeconomic problem among ethnic groups. Because of the occupations based on racial lines, there are big gaps in the economic wealth among the ethnicities. These economic imbalances between the natives or the Malay and the Chinese caused dissatisfaction among the Malays, which caused the racial riots in May 1969. To solve the socioeconomic problem, the government launched its affirmative action through the NEP in 1971. The main goal of the NEP was to achieve national unity (EPU, 2004). The NEP plan was intended for 20 years, from 1970 to 1990.

The policy was operationalised by the First Outline Perspective Plan (1stOPP1). The details of the implementation were carried out through a 5-year economic plan that began with the 2nd Malaysia Plan (1971-1975) through the Fifth Malaysia Plan (5thMP). The period for the Malaysia plan is in Table 2.17.

Table 2.17. Malaysia Plans

Malaysia Plan	Period
Second Malaysia Plan	1971-1975
Third Malaysia Plan	1976-1980
Fourth Malaysia Plan	1981-1985
Fifth Malaysia Plan	1986-1990

Under the NEP, the Bumiputera group was the focus in this policy since they were the sons of the soil of Malaysia. As mentioned by Prime Minister Najib (2013), the reason the government protected the Bumiputera was to avoid the Malay or Bumiputera group feeling insecure, which could lead to an instable country or repeated tragedy as in 1969. Siddique and Suryadinata (1981) also pointed out that the policy assisted the Bumiputera because of the socioeconomic conditions. The NEP had two main strategies to achieve the goal of national unity:

1) To reduce poverty and increase the number of employed people irrespective of race. The incidence for poverty and income in 1970 is shown in Table 2.18:

Table 2.18. Impact of NEP on poverty and income

Ethnic group	Poverty rate(%)	Average income
Malay	64.8	172
Chinese	26	394
Indians	39.2	304
Others	44.8	813

2) To restructure the Malaysian society to reduce and eliminate the identification of race with the type of employment. The percentage involvement of the ethnic group in the occupation fields in 1970 is shown in Table 2.19:

Table 2.19. Occupation by ethnicity

Work field	Malay	Chinese	Indians	Others
Agriculture	67.6	19.9	11.5	1
Mining	32.1	58.7	8.5	0.7
Business/commerce/Public Management/Education/ Public Service	42.6	45.5	10.7	1.2

Under the NEP, three important restructurings were planned by the government, which included the restructuring of racial composition in employment, restructuring of wealth ownership and creation of the Bumiputera Commercial and Industrial Community (BCIC) in all categories and all levels (Sodri et al., 2013).

Prior to the NEP, the entrance of Malays to the university was limited. Haji Din (1992) showed that only 20.6% of Malay enrolled at University Malaya in 1963, and the majority took art courses. He also points out that only 119 Malay graduated from University Malaya from 1964 until 1970.

The government believed that the increasing number of Malays in the professional sector was not enough to reduce the gap in income among the ethnicities (Sodri et al., 2012). For that reason, the government concentrated on developing Malay entrepreneurs and capitalists under BCIC (Omar, 2006). The government tried to create and increase Malays' participation in business, and special privilege was given to the Bumiputera entrepreneurs. For example, a Malay contractor will be paid 10% more by the government compared to non-Bumiputera, an

allocation of a minimum quota of 30% of the contract work was offered by the government, and loan facilities and requirements for the company, such as insurance, required a 30% share of Bumiputera to get the license.

In the employment sector, to restructure the racial composition, the government needed to ensure that the Malay or Bumiputera received higher education. Under the British education system, the Bumiputera, especially the Malay, received little education. Only the rich people had the chance to go to English schools. During that time, the Malay school education was not recognised as a minimum condition to enter tertiary education. To ensure more Malay and Bumiputera that had Malay school education went on to higher education, universities such as UKM were established in 1971. UKM was established with the purpose to develop professional groups using the Malay language as the medium to transfer knowledge. The university still uses the Malay language as the main teaching medium.

Meanwhile, the government recommended to hire Malays people in private company, agencies and government link companies to increase their rate of participation in the professional work force. The government did that since in their view, the growth of the economy is not sufficient to increase the level of the Malays' involvement in the professional sector. In contrast, Sodri et al. (2012) point out that the Chinese companies discriminate against the Bumiputera by making Chinese language part of the requirements or specifying that they only want Chinese workers.

As of 1970, the Bumiputera economic equity was 2.4% compare to 32.3% by the Chinese. To restructure the wealth ownership, the government put the target as 30:40:30 ratio for corporate equity[3]. The reason why the government emphasised corporate equity because when the Malaysia 'financial structure becomes increasingly sophisticated, the key to ownership and control of wealth will be through ownership of equity capital' (4th Malaysia Plan, 1981).

[3] Corporate equity refers to sharing capital of a limited company.

In 1970, the government target was that within 20 years, the Bumiputera would have at least 30% of all business in each category and level (equiTable share of economy) (Malaysia second plan, 1973; Omar, 2006; Mahathir 2008). Meanwhile, the non-Bumiputera and foreigners will have a share of 40% and 30% of the national wealth.

Agencies such as Bumiputera Bank, Majlis Amanah Raya (MARA), National Equity Corporation (PNB), State Economic Development Corporation (SEDCs) and Urban Development Authority (UDA) were established by the government to help acquire wealth for the Malays. MARA (Majlis Amanah Rakyat), for instance, was established in 1966 to help, train and guide the Bumiputera in terms of business. It plays a big role in Malays' economic development even today. Initially, it takes over the function of RIDA. Regulation was also done for the listed companies to have at least a 30% quota of corporate equity for the Malays (Sodri et al., 2012).

2.6 Post NEP result

2.6.1 Corporate equity

After 20 years of implementation, the Bumiputera's corporate equity only reached 20.3% in 1990; meanwhile, the non-Bumiputera increased up to 46.2% (Omar, 2006). Since the target of 30% quota was not achieved for the Bumiputera in 1990, the government successor to the NEP was the National Development Policy (NDP). The NDP also carried out two important agendas of NEP which were to restructure society and eliminate poverty. The NDP covers a period of 10 years. But later, due to the economic crisis in 1998, the effort to increase the Bumiputera equity had reduced again. The reduction was not just to the Bumiputera but also to the Chinese and others group as shown in Table 2.20.

Table 2.20. Share of corporate equity by ethnicity

	1995	**1999**
Bumiputera	20.6	19.1
Chinese	40.9	37.9
Indian	1.5	0.5
Others	37	41.5

Source: 8th Malaysia plan

To increase the number of Bumiputera involved in business, government companies were privatised (Omar, 2006). Another regulation that was created to protect the Malays was each private company must have at least 30% of Bumiputera equity. This effort can be seen through the creation of BCIC in 1988, as reported by Omar (2006), where 112 Bumiputera companies were selected to be vendors for 51 multinational companies. The status for Bumiputera equity can be seen in Table 2.21.

Table 2.21. Bumiputera share of corporate equity

Year	Equity share
1970	2.4%
1985	17.8%
1995	20.6%
2010	23.09%
2014	23.5%

As of September 2014, according to the second finance minister during that period, Datuk Seri Ahmad Husni , the Malays' economic equity already reached 23.5% ("Mencapai 30 Peratus Ekonomi", 2014). But due to the unavailability of data that is accessible to the public, it is unknown whether the 23.5% is a pure figure or only quantity, but it is not quality since it

considered the share of current government-related companies. As pointed out by Mahathir (2008), Omar (2006) and Yaacob (1981), even though there is an increasing number of Malays sharing corporate equity, the main increase was due to the share of government-related companies. The NEP showed success by increased numbers but not quality (Yaacob, 1981).

In 2001, for example, the actual Bumiputera equity was less than 2% after the government-related share was excluded (Omar, 2006). If the government, which is led by UMNO, changes to the opposition party, the figure could possibly change since the opposition tried to demolish the Malays' privilege. This happened in the states that have been controlled by the opposition party, such as Penang. In 2008, Penang Chief Minister Lim Guan Eng, who is Chinese, declared that Penang would not carry out any DEB policy, and all business contracts would be based on meritocracy. Other issues as highlighted by the Najib Prime Minister in the 2015 budget are that even though the Bumiputera equity is already 24%, the Bumiputera 'effective control' in corporations is around 10%.

2.6.2 Incidence of poverty

In terms of incidence of poverty, the government managed to reduce it to 0.6% for Malaysia in 2014. This was a reduction of 48.7% since 1970. However, the Bumiputera is still among the highest in the incidence of poverty. Looking at Table 2.22 below, Chinese poverty is the lowest since 1970, and in 2014 the rate almost reached 0%.

Table 2.22. Incident of poverty by ethnicity

	1970	1979	1987	1992	1997	2002	2004	2007	2012	2014
Ethnic Group										
Bumiputera	64.8	49.2	26.6	17.5	9	9	8.3	5.1	2.2	0.8
Chinese	26	16.5	7	3.2	1.1	1	0.6	0.6	0.3	0.1
Indians	39.2	19.8	9.6	4.4	1.3	2.7	2.9	2.5	1.8	0.6
Others	44.8	28.9	20.3	21.3	13	8.5	6.9	9.8	1.5	0.9

Source : Economic planning unit under prime minister department

2.6.3 Improvement of the Bumiputera economic situation

After NEP was introduced the situation of the Malays and Bumiputera had improved in term of economics and in terms of education. For instance, Sodri et al. (2012) indicate that the average Malays' income increased to RM1163 (1990) from RM 264 (1970). Even though the number is increasing, compared with the other ethnicities showed that the Malays still have the lowest average income and the lowest average growth despite the protection and efforts made by the government. Table 2.23 shows the mean monthly gross household income by ethnic group. Table 2.24 shows the comparison of income level based on ethnicity between 2009 and 2012.

Table 2.23. Mean monthly gross household income by ethnicity

	1970	1979	1987	1992	1997	2002	2004	2007	2012	2014
Malaysia	264	678	1083	1566	2606	3011	3249	3686	5000	6141
Ethnic Group										
Bumiputera	172	492	868	1268	2038	2376	2711	3156	4457	5548
Chinese	394	1002	1488	2192	3738	4279	4437	4853	6366	7666
Indians	304	756	1105	1604	2896	3044	3456	3799	5233	6246
Others	813	1475	2992	1163	1680	2165	2312	3561	3843	6011

Source: Economic planning unit under prime minister department

Table 2.24. Average income level

	Year	**Year**	**Annual Growth Rate**
Race	**2009**	**2012**	**%**
Malay	3624	4457	6.9
Chinese	5011	6366	8.0
Indian	3999	5233	9.0

Source: Malaysia statistic department (2012)

After the NEP, the number of Bumiputera working with the government and becoming professional workers also increased drastically. The government effort in developing the Malay or Bumiputera group can be seen in the 90s The EPU report (2004) showed that in 1970 there were only 225 out of 4576 Bumiputera in the professional group (doctors, engineers, dentists, architect, accountants and veterinary surgeons). The number had increased to 11753 (29%) in 1990, which also included professions like lawyers and surveyors (EPU, 2004).

2.6.4 Education

Before the NEP there were only two universities and three colleges where English was used as the medium (Haji Din, 1992). Later, in Mei (1970), the University Kebangsaan[4] Malaysia was established and the Malay language was used as the medium of teaching. The first enrolment started with 191 students (Haji Din, 1992). Three years later, the University of Agriculture was established. In addition, the government also upgraded the Institute Kebangsaan Malaysia to a university, which was later known as University Teknologi Malaysia in 1975 (Haji Din, 1992).

The government has made many efforts in terms of training, financing, advising and special treatment and protection for the Malay entrepreneurs, but the result is still low compared to what has been done. According to the 6th Prime Minister Najib, even though there are increasing numbers of Bumiputera entrepreneurs, the actual situation is not significant where most of the Bumiputera entrepreneurs are involved in small and micro business. The majority of those entrepreneurs only have education up to secondary school (Department of Statistics, Malaysia 2009). According to Shokory et al. (2008), one of the

[4] Kebangsaan means national in the Malay language.

ways to develop and ensure the survival of Bumiputera in business is through higher education (Shokory et al., 2008).

Moving forward in 2013 as the effort to increase Bumiputera participation in business, MARA, for example, already gives 634 million Ringgit loans to more than 7000 Bumiputera entrepreneurs. Another 500 million Ringgit was allocated by MARA for 2014. PNB, which is another government agency that deals with entrepreneurs, has also given business loans to 4800 entrepreneurs in the amount of 906 million Ringgit in 2013. The government, on the other hand, under the 2014 national budget, announced a 1 billion Ringgit Malaysia fund to increase the Bumiputera's participation in business. A new entrepreneur scheme called SUPERB, with a fund of 100 million for a period of three years, was also introduced to help young, innovative and creative entrepreneurs involved in business. Curiously, with all the effort, especially the financing capital which the Bumiputera are lacking, the target objective are still not achieved. Human capital plays a much more important role in deciding the direction and future of business (Utusan Malaysia, 2013). The Malays need to be prepared to not depend on the protection of the government because if one day the protection and privilege are taken away without sufficient preparation, the Malays could lose everything (Mahathir, 2008). In order to strengthen the Malays, they need to learn the knowledge that will make them stronger (Mahathir, 2012; Omar, 2006). Again, in 2014, the government announced that 2015 would be the entrepreneurs' budget-friendly year in which the government allocated tremendous funds and incentives for entrepreneurs. Details of the financial incentives that were provided in 2015 will be discussed in the next section.

2.7 Effort by the Malaysia government to develop Bumiputera entrepreneurs

2.7.1 Extension of policy objective beyond NEP

After the NEP ended in 2000, the government continued its objective through the National Development Policy (NDP) for the years 1990 through 2000. The NEP and NDP were launched specifically for national unity (EPU, 2004). Together with the NDP, the government launched its 'Vision 2020'[5]. Under this vision, the government targeted Malaysia to be a developed nation by 2020.

After the NDP expired, the NEP policy objective was carried out by the National Vision Policy (NVP) from 2000 through 2010. Even though the NEP policy period ended, the objectives have been extended beyond 1990 in policies such as the NDP or another form. The NEP objective was carried out from the 2nd Malaysia Plan through the 10th Malaysia Plan as shown in Table 2.25.

Table 2.25. Successive Malaysia plans 1971-2015

Malaysia Plan	Period
Second Malaysia Plan	1971-1975
Third Malaysia Plan	1976-1980
Fourth Malaysia Plan	1981-1985
Fifth Malaysia Plan	19861990
Sixth Malaysia Plan	1990-1995
Seventh Malaysia Plan	1996-2000
Eight Malaysia Plan	2001-2005
Ninth Malaysia Plan	2006-2010
Tenth Malaysia Plan	2011-2015

[5] Vision for Malaysia introduced by the Malaysia's 4th Prime minister. The vision target is for Malaysia to be a developed nation by 2020.

The current government is committed to continue the agenda to achieve the target of 30% Bumiputera corporate equity by 2020. Even though the government stresses the development of the Bumiputera as a part of the national agenda (Malaysia budget ,2014), the government assures that the development of Bumiputera wealth does not mean taking the current wealth of others but instead creating new wealth.

2.7.2 Establishment of special ministry

The effort to develop entrepreneurs has always been a concern of the government. This can be seen in the effort taken to establish a specialised ministry related to developing and assisting entrepreneurs.

The history of the ministry specialising in entrepreneurship began in 1974 when the government established the Ministry for the Coordination of Public Corporation. Two years later, the ministry was changed to the Ministry of Prime Industries, which is charged with coordinating public corporations. In 1995, the government became more committed to developing Bumiputera entrepreneurs and industry, and this can be seen in the establishment of the Ministry of Entrepreneur Development in 1995 (Ariff & Abu Bakar, 2005.).

In 2004, after a change in the prime minister, the new government replaced the Ministry of Entrepreneur Development with the Ministry of Entrepreneurship and Cooperative Development (MECD), and has taken the lead in developing Bumiputera entrepreneurs.

Even more than 30 years after the implementation of NEP, not many know what entrepreneurship is about. This can be seen when Mustapha Mohamed, one of the ministers of the Ministry of Entrepreneur Development, said that ‘we were charged with promoting entrepreneurship throughout the country. But neither I nor my senior staff had any idea what entrepreneurship was’ (Saguinsin, 2013). Again, in 2009, the Ministry was restructured after the prime minister changed. Its functions were allocated to various ministries and agencies.

The summary of the ministries established related to entrepreneurship are presented in Table 2.26.

Table 2.26. Ministries assuming entrepreneurship competences

Year	Established Ministry
1974	Ministry for the Coordination of Public Corporations
1976	Ministry of Prime Industries (MPI)
1995	Ministry of Entrepreneur Development
2004-2009	Ministry of Entrepreneurship and Cooperative Development
2009-present	The functions have been taken over by various ministries

2.7.3 Establishment of agencies and council

Below Table 2.27 is a list of specific councils and agencies established in recent years by the government specifically to help develop and assist Bumiputera entrepreneurs.

Table 2.27. Entrepreneurship support bodies

Year established	Agencies /Council
1999	TEKUN (Tabung Ekonomi Kumpulan Usahawan Niaga)
2005	INSKEN (National Institute of Entrepreneurship)

2011	MTAB (Bumiputera Agenda Action Council)
2011	TERAJU (Strategic unit under the prime minister's office)
2011	Entrepreneurship National Council of Higher Education
2013	Bumiputera Economic Council
2014	National Entrepreneur Development Office

In 2005, the government established INSKEN (National Institute of Entrepreneurship) to help current entrepreneurs and to develop new entrepreneurs. Among the plans under INSKEN is the graduate entrepreneur scheme, where graduates are given basic courses about entrepreneurship and finances up to 500 thousand RM to candidates who meet the requirements under the graduate entrepreneur fund.

The support by the government for the Bumiputera continued with the commitment under the 10th Malaysia Plan (2011-2015), when the MTAB (Bumiputera Agenda Action Council) was established to draft policy and strategic direction and to monitor the programme under the Bumiputera development agenda.

Through MTAB, another special strategic unit called TERAJU was established in 2011 to lead, coordinate and implement the Bumiputera agenda to ensure the 30% quota was achieved. TERAJU has specific functions to concentrate on entrepreneurship, wealth creation, financing, education and evaluation, both institution and policy related. In the same year, the Bumiputera Economic Transformation Programme was launched under MTAB (Bumiputera Agenda Action Council). This blueprint drafted the specific policy, strategy and initiative to ensure

that participation of Bumiputera in economic activities is increasing and benefiting from the Malaysia economic transformation programme.

In 2011, the Ministry of Education Malaysia established the Entrepreneurship National Council of Higher Education to help strengthen the implementation of the entrepreneurship development policy and entrepreneurship strategic plan in the Higher Education Institute (HEI) (Ahmedullah, 2014). In addition, the role of the council is to offer ideas and input related to the development of entrepreneurs in higher education and to become the bridge between the government, entrepreneurs, higher education institutions, industry and alumni. The members of the council consist of company CEOs and top government officers.

In 2013, the Bumiputera Economic Council was proposed by the government to replace the MTAB to increase and strengthen the involvement of Bumiputera in the economy and to achieve the target by 2020. Under this council, a specific Bumiputera development unit was established in every government ministry to empower and ensure participation of the Bumiputera in economic activities.

The government realised that small Bumiputera companies will always have a problem of getting financed (Malaysia Budget, 2013). To solve this, in the 2014 budget, the government put a high commitment on developing entrepreneurs. A special unit was established under the Ministry of Finance to develop entrepreneurs called the National Entrepreneur Development Office (Malaysia Budget, 2014).

Since the implementation of NEP policy, 94 government agencies and 1137 companies have been set up by the government to increase the Malays' participation in economic activities by giving financial credit facility, training and technical assistance, policies etc. (Omar, 2006).

2.7.4 Funds for entrepreneurs

The Table 2.28 shows some specific funds allocated in the yearly budget provided by the government in the recent years for the Bumiputera entrepreneurs and graduate entrepreneurs. Looking at the trend, the amount offered has increased throughout the years. In 2015, the government's budget was seen to be entrepreneur-friendly because the government is looking to become an entrepreneurial nation. In addition to increasing the budget, the government also increased the maximum budget that can be apply by the entrepreneurs.

Table 2.28. Funds allocated for Bumiputera entrepreneurs

	Amount (Ringgit Malaysia)	Purpose	Organisation in charge
2012	25 million	Graduate entrepreneur fund	SME bank
	300 million	Bumiputera entrepreneurs	Dana Mudahcara perkongsian awam-swasta or PPP
2013	1 billion	Bumiputera entrepreneurs	SME bank
2014	50 million	Graduate entrepreneur fund (TUS2)	SME bank
	30 million	New Bumiputera entrepreneur scheme	SUPERB
	300 million	Bumiputera equity fund, to help Bumiputera take over companies that have potential to be publicly listed	SME bank
2015	350 million	Bumiputera entrepreneurs	TEKUN
	30 million additional	New Bumiputera entrepreneur scheme	SUPERB
	200 million	Bumipuetra entrepreneurs	Tabung Haji
	1.8 billion	For AIM members	Amanah Ikhtiar Malaysia (AIM)
	600 million	To increase Bumiputera equity	EKUINAS

2.8 Entrepreneurship in Malaysia

In Malaysia, the government knows that entrepreneurship is important for the economy and human capital development. According to Radam et al. (2008), SMEs are the backbone of the Malaysia economy. In 2006, for example, 99.2% of business in Malaysia was SMEs. The 2011 census showed that SMEs fell to 97.3%, but in term of GDP contribution, it increased to 36.3% in 2015 compared to 29.6% in 2005. The government's target is to achieve 41% contribution from SMEs in 2020.

Since 2013, the definition of SMEs can be divided into three categories: micro, small and medium. The difference is based on the number of employees and the business's sales turnover as shown in Table 2.29.

Table 2.29. Different thresholds for the classification of SMEs

Category	**Manufacturing**		**Service and other sectors**	
	Number of workers	**Sales turnover**	**Number of workers**	**Sales turnover**
Micro	Fewer than 5 persons	Below RM 300k	Fewer than 5 persons	Below RM 300k
Small	Between 5 and 75 persons	From 300k to RM15 million	Between 5 and 30 persons	From 300k to RM3 million
Medium	From 75 to 200 persons	From RM15 million to RM50 million	From 30 to 75 persons	From RM3 million to RM20 million

In terms of the legal registration status based on the 2011 economic census data, 71% were registered as a sole proprietorship, 18.4% as a private limited company and 8.5% as a partnership. In terms of job contribution, SMEs accounted for 65.5% of the total employed population in 2015. In 2014, the data from company registrations showed 88% of Bumiputera

companies were micro companies, which meant that the sales were less than 300k and the staff comprised fewer than 5 persons (Teraju Report, 2014).

As of 2011, the majority of SMEs in Malaysia fell under the micro category (77%), followed by 20% in the small SME category. Ninety percent of the SMEs are in the service category, and women accounted for 13.1% of the total SMEs (Malaysia Statistic Department, 2009). In terms of the contribution of SMEs towards GDP, the average rate was around 5% as shown in Table 2.30.

SMEs' contribution to GDP

1) Annual Growth of Overall GDP and SME GDP (%) (Constant 2010 prices)

Year	2011	2012	2013	2014[e]	2015[p]
SME GDP Growth (%)	7.3	6.0	6.4	13.5	6.1
Overall GDP Growth (%)	5.3	5.5	4.7	6.0	5.0

e: estimate
p: preliminary

e: estimate
p: preliminary

Table 2.30. SMEs' contribution to GDP

The data in Table 2.31 summarises the findings of Global Entrepreneurship Monitor results for Malaysia from 2009 to 2015.

Table 2.31. Entrepreneurship in Malaysia

	Entrepreneurship activity	2009	2010	2011	2012	2013	2014	2015
Entrepreneurial activities	Nascent entrepreneurship rate	2	1	3	3	2	1	1
	New business ownership rate	3	4	3	4	5	5	2
	Early stage entrepreneurial activity (TEA)	4	5	5	7	7	6	3
	Established business ownership rate	4	8	5	7	6	8	5
	Discontinuation of business (% of TEA)	3	2	3	2	2	2	1
	Necessity driven (% of TEA)	25	12	10	13	18	18	14
	Opportunity driven (% of TEA)	44	41	72	61	65	64	67
Attributes and entrepreneurial perception	Perceived opportunities	45	40	37	36	41	43	28
	Perceived capabilities	34	24	31	31	28	38	28
	Fear of failure	65	45	30	36	33	27	27
	Entrepreneurial intentions	5	5	9	13	12	12	6
	Entrepreneurship as a good career choice	59	56	52	46	42	50	39
	High status for successful entrepreneurs	71	67	51	51	45	t50	51
	Media attention to entrepreneurship	80	88	74	63	62	70	64

Source : GEM 2009-2015

Looking at the data prepared by GEM from 2009 to 2015 indicated a downtrend in the perception of entrepreneurship as a good career. For example, in 2009, 59% of Malaysians viewed entrepreneurship as a good career choice, but in 2015, only 39% viewed entrepreneurship as a good career choice.

In terms of the quality of entrepreneurs, the trend showed an increase in people who chose entrepreneurship because of opportunity rather than necessity. In terms of new business ownership, this also showed a downtrend of close to 2% in 2015 compared to 5% in 2013 and 2014.

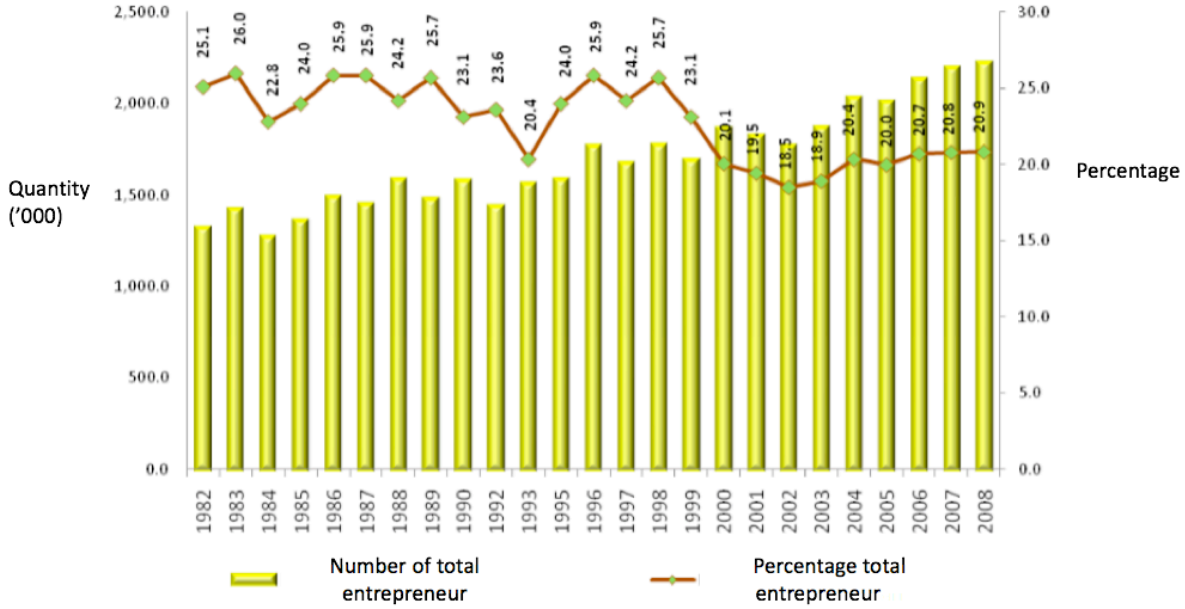
The government realised that based on trends and to become a developed nation, there is a need to concentrate on entrepreneurship as the catalyst for economic change. Under the 11th Malaysia Plan, entrepreneurship has been established as a major focus of the vision for 2020.

2.9 Problem with entrepreneurs in Malaysia

Developing entrepreneurs has been a priority of the government, especially after the NEP policy. Although many efforts have been made, a report from the Malaysia Statistic Department (2009) showed a reduction in the number of people who became entrepreneurs from 1982 to 2008. In 1982, there were 25.1% of entrepreneurs from the working population. But in 2008 the number was reduced to 20.1%. The details of the trend are show in Figure 2.8, and Figure 2.9 shows the trend of entrepreneurs by gender.

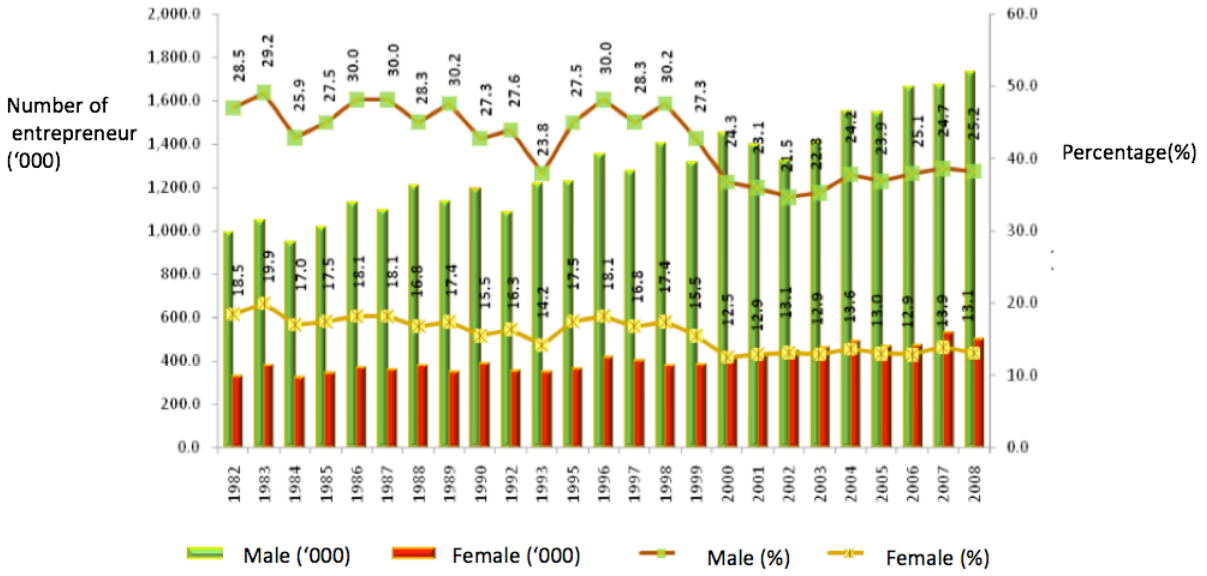
In terms of gender, there was also a decrease in the number of male entrepreneurs from the total working population. In 1982, 28.5% of the working population was male entrepreneurs, and this number decreased to 25.2% by 2008. The details of the trend are shown in the figure 2.9 below.

Figure 2.8. Number and percentage of total entrepreneur in Malaysia from 1982-2008



Source: Malaysia Statistic department (2009)

Figure 2.9. Number and percentage of male and female entrepreneur in Malaysia



Source: Malaysia Statistic Department (2009)

The Figure 2.10 also show that most of the entrepreneurs are people with no official education, followed by people with low education, middle education and tertiary education (Malaysia Statistic Department, 2009).

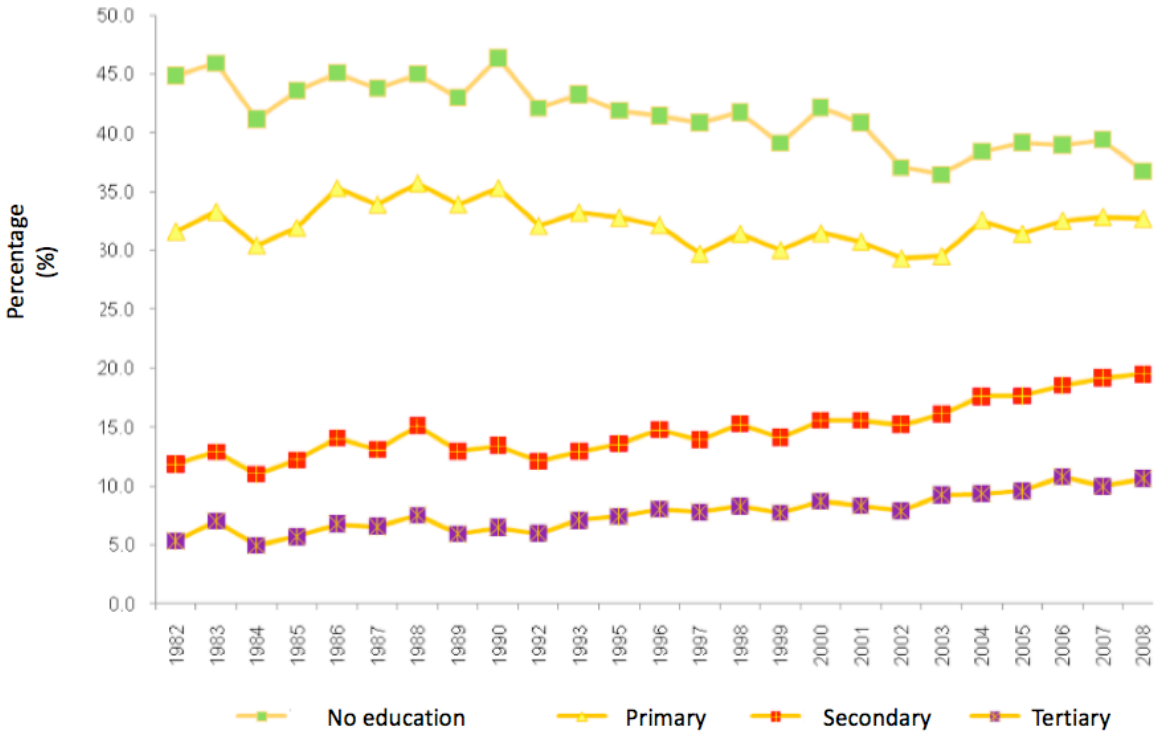


Figure 2.10. Level of education of entrepreneur in Malaysia

Source: Malaysia Statistic Department (2009)

In addition, research by Ariff and Abu Bakar (2005) suggested that even though the number of registered businesses is increasing, there was a reduction in in the number of businesses established between 1992 and 2000.

Possible reasons for low participation of graduates are they prefer to work for others because it is more sTable, especially with the government's special scheme for the Malays. According to Dr Ramli, director of the Alumni Centre at UKM (2009), research conducted by UKM on 2008 graduates showed that 71.8% of graduates preferred to work for the

government or private sector and only 2.9% were interested in starting a business. Other reasons for the lack of interest could be the Bumiputera's lack of role models in this area. This is important, as argued by Ibrahim and Ellis (1998), because 'the role model provides the potential entrepreneur with the aspiration to follow the same career choice'.

Looking back at history, the Malays blame colonialism for what happened to the Malays' economy. Omar (2006) pointed out that the divide and rule policy established by colonialism and the monopoly system destroyed all the Malays' business chances and became the turning point for the Malays to be afraid to take chances. According to Mahathir (2012), the Malays may not been have marginalised if they were more entrepreneurial and involved in the work needed in the cities and commercial centres during that period instead of working in the villages. The immigrants from China and India were brought in to fill the gaps that were left by the Malays in certain occupations (Mahathir, 2012). As a consequence, the Malays lost a share of the economic activities that they once dominated (Mahathir, 2012).

After independence, the major reason of existence for most Malay entrepreneurs was due to the political party. The government, which was led by the Malays' party called UMNO (United Malays National Organisation), is the reason most Malay entrepreneurs exist. If the political power changed to an opposition party, the number of existing entrepreneurs will be affected.

The protection of the government made the Malays prefer to work in the government and private sector rather than venture into business. The current government support has become a walking stick for the Malays and makes them dependent on the government. The impact of this is that the Malays become non-risk takers (Mahathir, 2012; 2008; Omar, 2006).

According to Omar (2006), indirect impact of the NEP created two types of Malay entrepreneurs. The first is the 'carried entrepreneur', who are given privileges in selected government contracts, special project allocation for Bumiputera contractors and licenses

allotted for the Bumiputera (Omar, 2006). Normally they have a good education but lack experience, but they have close relationships with politicians. The second type of entrepreneur is the 'political entrepreneurs'. The 'political entrepreneur are the people in the politic that involved direct or indirectly in business using their political power and connection' (Omar, 2006).

The problems with the carried and political entrepreneurs are they are only temporary because they depend on political power. The Malays have looked at involvement in politics and relationships with politicians as a way to become rich.

Under the current government, 'to be an entrepreneur and to get finance is not depend on know-how but it is more to who you know' (Omar, 2006). For that reason, many entrepreneurs manage to go into business without risking their own capital. However, the consequences of this are that many have failed. Omar (2006) indicates that this could be the reason why non-performing loans (NPL) happened after the 1997 crisis because they were given to people who do not qualify for them. The instant capital was received by the unqualified entrepreneurs was probably the reason for most failures because human capital is important in deciding the fate of businesses. According to Mahathir (2008), the Malays' weakness in financial management was a reason for the failure.

The government encouraged collaboration with non-Bumiputera to develop the Bumiputera. But there were many Malay entrepreneurs who had attitudes of earning quick profits in a short period (Mahathir, 2008; Omar, 2006). This Malay weakness was used by the Chinese to their advantage in business. Most of the carried entrepreneurs take shortcuts to profit by practicing the 'Ali Baba' business method (Siddique & Suryadinata, 1981; Omar, 2006). The term Ali Baba refers to collaboration between the Bumiputera and Chinese in business activities. The word Ali refer to bumiputera and Baba are term for the non Bumiputera. The practice is the Bumiputera entrepreneurs use their names to get business

from government contracts, but in reality, they only take the commission or other type of profit and let the Chinese do the actual work. The Chinese can still profit from the business because of the government policy to pay a 10% higher price to the Bumiputera contractors. This practice was criticised because the Bumiputera were not actually involved in the business and tried to make money the fast way by sacrificing real opportunities to do business (Mahathir, 2012), which was also the main reason for the Malays' weakness in business (Omar, 2006). Statistics from the Attorney General Office showed that business failures among Malay entrepreneurs are higher than the Chinese (Omar, 2006).

Even with the support and protection of UMNO for the Malays, the number of Bumiputeras who have economic equity is still far from the government's objective. In 2001, for example, the real Bumiputera economic equity was less than 2% if the number of government agencies and corporation were excluded, which could possibly happen if the current opposition political parties took the country's political power as highlighted by Omar (2006).

Because of the carried and political entrepreneurs, the government was viewed as corrupt because only certain people who were close to the politicians got a share of the business. The protections for the Bumiputera have brought dissatisfaction to the Chinese. To demonstrate their dissatisfaction feelings during the Malaysia 13th general election in 2013, the Chinese only voted for Chinese from the opposition parties called DAP, which are Chinese ethnic - dominated parties. In all previous election the vote of the Chinese ethnic are divided between the pro government and the opposition parties. The problem face with DAP and the opposition party because tried to reduce and abolish the Malays' privilege by not implementing the NEP policy. This can be seen in the state that has been controlled by the opposition party DAP in Penang since 2008 (Bernama, 2008).

According to Mahathir (2012), even though the Malays have special economic privilege and support from the government, 90% of the millionaires in Malaysia are Chinese. Even 40 years after the effort began to develop entrepreneurs among the Bumiputera, the results still have not reduced the economic imbalance between the races. This can be seen through the statistics, for example, even though the majority is Malay, only one Malay person is ranked in the top 10 richest people in Malaysia. Statistics by *Forbes* magazine from 2007 showed that this situation was from 2007 through 2016. However, the result is improving, and the numbers have increased from 2 people in the top 20 in 2011 to 5 people in the top 20 in 2013 (Forbes, 2013). Mahathir (2008) and Omar (2006) suggest that the problem is not the system but more the Malays' attitude. In addition to the attitude problem, the Bumiputera entrepreneurs also lacked education, skills and experience (Utusan, 2012; Pihie & Elias 2004; Malaysia outline perspective plan II, 1991; Nik Abdul, 1983).

The government commitment to develop Bumiputera entrepreneurs can be seen through various policies and efforts. For example, under the Ninth Malaysia Plan (2005-2010), entrepreneurship was put into focus since the objective of the plan is to enhance national competitiveness and resilience. In this plan, the government specifies the need to enhance Bumiputera participation 'in the manufacturing sector, efforts to create Bumiputera technopreneurs through collaboration with research institutions and larger technology based enterprises' (Ninth Malaysia Plan, pg 125). In addition, the government also stressed that access to technology, training, finance, market and strategic locations will be given to Bumiputera entrepreneurs.

2.10 Entrepreneurship education in Malaysia

Aware of the importance of human capital development, the government has spent 2.7% from the GDP for tertiary education in 2005. Comparisons among some of the countries in

Asia and developed countries showed that Malaysia has the highest expenditure for tertiary education as shown in Table 2.32 below.

Table 2.32. GDP spending for tertiary education

Country	**Percentage of expense from GDP for tertiary education year 2005**
Philippines	0.7
India	0.7
China	0.8
Thailand	1.0
United Kingdom	1.1
Germany	1.2
Ireland	1.2
United States	1.4
Finland	1.7
Sweden	2.2
South Korea	2.4
Malaysia	2.7

Source: Malaysia Higher Education Strategic Plan, 2008

Currently, there are 20 public universities in Malaysia and 521 private higher education institutions.

Even though the development of entrepreneurs is important, the effort through education was not emphasised in formal school education until 1992 (Haji Din, 1992). Later, in the Ninth Malaysia Plan (2006), the importance of entrepreneurship education was stressed.

Entrepreneurs are important to a country like Malaysia, which is working to become a developed nation and the existence of entrepreneurs can be a catalyst for economic growth, as mentioned by Nabi and Liñan (2011) and solve the unemployed graduate problem.

In addition to low participation in entrepreneurial activities, unemployment is also one of the biggest problems Malaysia faces. The latest report by the Malaysia National Bank (2016) showed that the global unemployment rate has grown since 2007 and reached its highest rate in 2013 at 13.2%. Malaysia also has similar problems, especially the unemployment rate among the youth, which was 10.7% in 2015, triple the overall unemployment rate in Malaysia.

Among the reasons for the increase in the unemployment rate is the reduction in terms of hiring. Even though there are hiring activities, they are mostly for low and medium skills. The impact of this is that university graduates suffered the most, which increased their unemployment rate.

The Table 2.33 shows the rate of unemployment among university graduates.

Table 2.33. Unemployment rate of university graduates

Year	**Percentage**
2008	24
2009	26.7
2010	24.6
2011	24
2012	25.6

Source : http://www.mohe.gov.my/web_statistik/Indikator_PT-2011-2012.pdf

Statistics from the Malaysia Statistic Department (2011) showed that the number of unemployed graduates from 1992 to 2010 has increased; in 2010, more than 65,000 graduates

were unemployed. A breakdown by ethnicity showed that 70.3% of the unemployed are Malays, followed by 20.8% Chinese, 6.2% Indian and the rest are other ethnicities. According to the latest report in October 2013 by Richard Riot, who is the Minister of Human Resources, the rate of the unemployed in Malaysia is 3%, and 233,065 are graduates (Kassim, 2013). This is also why entrepreneurship has been determined to be a critical agenda project (CAP) under the National Higher Education Strategic Plan, to increase the employability of graduates, especially the Malays.

Based on the latest figures from Malaysia's National Bank (2016), 23.9% of graduates were unemployed in 2015. The average unemployment rate from 2010 to 2014 was 24.8% (Malaysia National Bank, 2016). The same report also showed that the bachelor degree students had the highest unemployment rate in 2015 at 27.9%. Looking at the education field, the graduates in science have the highest unemployment rate at 27.7%. This is followed by graduates from the literature and social science fields. In 2015, there were 405,000 unemployed graduates.

For the self-employed graduates, the trends are very slow with a low number of newcomers. Based on the statistics as presented in the Table 2.34, the self-employment rate from public universities produce fewer than 900 entrepreneurs every year.

Table 2.34. Number of self-employed graduate from 2009-20013

Year	**Number**	**Percentage (%)**
2009	573	1.3%
2010	690	1.4
2011	778	1.5
2012	851	1.6
2013	784	1.6

Source: Indicator pengajian tinggi

According to Dana (2001), the effort to develop Malay entrepreneurs in tertiary education started in the Institute of Technology Mara in 1975. Meanwhile, according to Cheng et al. (2009), entrepreneurship education officially started in universities in Malaysia in the 1990s. During that period, entrepreneurship education was an elective course and only taught in certain universities.

In 2003, the Basic Entrepreneurship Education Programme was introduced to all final year students in the public university and one private university (Mohamed et al., 2012). The graduates from this course received a certificate that makes them eligible to apply for the Graduate Entrepreneur Fund that is managed by INSKEN (National Entrepreneurship Institute).

In 2007, under the National Higher Education Strategic Plan, the Ministry of Higher Education (MoHE) changed the regulation to make entrepreneurship a compulsory subject for all undergraduate students at the university. To ensure the implementation was coordinated and supervise, the MoHE launched the Entrepreneurship Development Policy whereby each university will have their own entrepreneurship centre to plan, coordinate and monitor the implementation of the EE. The target was to increase graduate entrepreneurs by 5% by 2015. To ensure the full support from the top management of the universities, MoHE introduced the development of entrepreneurial graduate as one of the key performance indicator for the university vice chancellor (Kosmo, 2013). The timeline for the EE in Malaysia is shown in Figure 2.11.

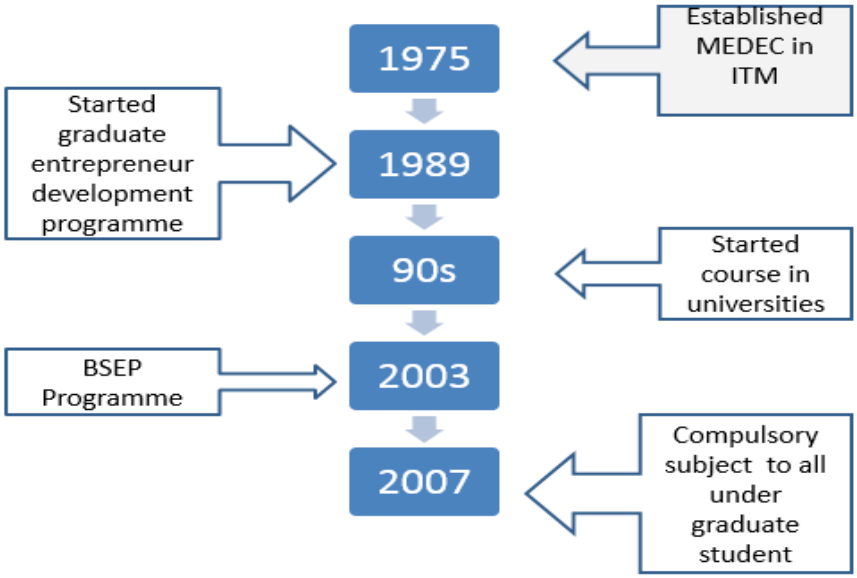


Figure 2.11. Timeline for EE in Malaysia

2.10.1 Policy by the Malaysia Ministry of Higher Education (MoHE)

As the country moves towards becoming a developed nation, the government needs to ensure that human capital is developed as well. To ensure this happens, the Ministry of Higher Education launched the National Higher Education Strategic Plan in 2007. The objective of the strategic plan was to develop a first-class mentality of human capital and to make Malaysia an excellent hub for international higher education.

The plan was divided into four phases. The first phase was to implement the foundation necessary for higher education, which started in 2007 through 2010. In 2007, the Ministry of Higher Education (MoHE) made the course compulsory to all students in public universities to improve the development of graduate entrepreneurs (MoHE, 2010a; MoHE 2010b).

It is followed by the second phase, which is the process to strengthen and accelerate that was launched in 2011 through 2015. In the second phase, entrepreneurship was put as one of the critical focuses as Malaysia was moving towards becoming a developed nation in 2020.

To move from a knowledge economy to an innovation-based economy, Malaysia needed quality and competitive human capital. To ensure it achieved this objective, the Ministry implemented the Entrepreneurship Development Policy in higher education institutions in April 2010. The objective of the policy was to promote a more planned and holistic entrepreneurship education and development in higher education. Through the policy, the Ministry wanted to develop graduates with entrepreneurial value, thinking and attributes, and also increase the number of graduate entrepreneurs to be a catalyst of economic growth and to promote the development of entrepreneurial academicians.

The policy has six core strategies including establishing an entrepreneurship centre at each university to plan, coordinate, control and evaluate the entrepreneurship education programme.

The Ministry aimed to achieve the following objectives:

1) An increase to 5% graduate entrepreneurs six 6 months after they finished their study by 2015. Currently, only 1.6% become entrepreneurs after finishing their studies.
2) 100% of students in tertiary education learn about entrepreneurship
3) 80% of university staff received training in entrepreneurship education and enterprising delivery methods in universities.

Fifteen strategies were undertaken by the Ministry to ensure the success of the entrepreneurship agenda at the universities:

1) Strengthen the function of the entrepreneurship centres at each university
2) Increase the planning and delivery system at the entrepreneurship centres
3) Include the values and characteristics of entrepreneurship in teaching across all curriculum and faculty
4) Increase the practical element in the teaching method
5) Increase the involvement of industry people as part of the teaching method

6) Increase the students' active participation
7) Strengthen and expand the support system for students' businesses
8) Offer an intervention programme
9) Create a high impact programme for students with a high tendency for entrepreneurship
10) Promote the development of entrepreneurship programmes based on businesses that will benefit the students, SMEs and society
11) Increase the number of competent and highly-skilled lecturers
12) Decrease the gap between theory and practice among lecturers
13) Improve the skill and competencies of the lecturers
14) Increase the commitment of universities higher management and involvement of all the university members
15) Create instruments that are suitable to measure the effectiveness and the impact of education and develop programmes in universities

2.11 About Universiti Kebangsaan Malaysia (UKM)

UKM or National University of Malaysia was established in 1970 with 192 students. This was the first university in Malaysia with the objective to develop a Malay professional group and to use the Malay language as the method of delivery. Before UKM, only 3/100000 Malay students managed to enter university because Malay school education during the colonial period was not recognised for the entrance.

The number of students from 2006 showed an increase of as many as 2000 students in 2010, which made the total number of students 7000 (Ahmad, Ali & Hamzah, 2011). Details of students are shown in the Table 2.35. Looking at the data from Table 2.36 from Ahmad, Ali and Hamzah (2011) showed that the number of female students in UKM accounted for

more than 65% on average from 2006 to 2010. Majority of the student in UKM are Bumiputera where the numbers showed more than 68% from the total students on average since 2006.

Table 2.35. Number of students in UKM base on gender

Gender/Year	2006	2007	2008	2009	2010
Male	1622(31.8%)	2040(31.7%)	2118(31%)	2385(33.3%)	2495(35.6%)
Female	3483(68.2%)	4406(68.3%)	4707(69.0%)	4774(66.7%)	4516(63.4%)
TOTAL	5105(100%)	6446(100%)	6825(100%)	7159(100%)	7011(100%)
Ratio	1:2.2	1:2.2	1:2.2	1:2.0	1:1.8

Table 2.36. Number of students in UKM base on ethnic

Ethnic/Year	2006	2007	2008	2009	2010
Malay	3568(69.9%)	4663(72.3%)	4879(71.4%)	5123(71.5%)	5129(73.2%)
Chinese	1287(25.2%)	1436(22.3%)	1534(22.5%)	1635(22.8%)	1349(19.2%)
Indian	225(4.4%)	225(4.4%)	239(3.5%)	240(3.4%)	275(3.9%)
Bumiputera	173(3.4%)	272(4.2%)	160(2.3%)	209(2.9%)	147(2.1%)
Others	25(0.5%)	347(5.4%)	173(2.5%)	161(2.3%)	258(3.7%)
TOTAL	5105(100%)	6446(100%)	6825(100%)	7159(100%)	7011(100%)

In 2006, UKM was upgraded by the Ministry of Higher Education to one of the four research universities in Malaysia. As a research university, the education is more focused on

research and the admissions of students are more competitive. The UKM student composition is 50:50 where the target number of undergraduate is 50 % and post-graduate students 50 %.

In 2010, UKM implemented the Innovation and Entrepreneurship Policy towards the learning experience for the students. Under this policy, UKM wanted to develop human capital that is innovative and has entrepreneurial value in whatever profession they choose. The policy will ensure that all the students will be exposed to the field of entrepreneurship and innovation.

The innovation and entrepreneurship policy has six main objectives:

1) Guide the students to execute the innovative thinking process and the importance of entrepreneurial activities
2) Guide the students to apply innovative thinking with a combination of multi-discipline knowledge in the context of entrepreneurship
3) Prepare the chances and space for the students to find innovative ideas
4) Increase the talent, potential and entrepreneurial characteristics among students based on entrepreneurship index score
5) Introduce the field of entrepreneurship to the students and motivate them to be entrepreneurs
6) Provide experience to the students to practice teamwork and to develop entrepreneurial value and moral

But even though entrepreneurship education has been compulsory at UKM since 2007, a study by Ahmad, Ali and Hamzah (2011) from 2006 to 2010 showed there is a large number of unemployed UKM graduates and a low number of graduates involved in entrepreneurship. Table 2.37 shows the tracer study by UKM on the type of career chosen by students after graduating, and Table 2.38 shows the number of self-employed graduates from 2007 to 2010.

Table 2.37. Career chosen by UKM graduates

Work/year	2007		2008		2009		2010	
	Non-science	Science	Non-science	Science	Non-science	Science	Non-science	Science
Government	250 (29.2)	430 (30.2)	379 (33.5)	398 (30.7)	702 (50.7)	426 (36.4)	560 (45.8)	511 (38.9)
Statutory body	45 (5.3)	53 (3.8)	58 (5.1)	41 (3.2)	75 (5.4)	39 (3.3)	66 (5.4)	53 (4.0)
Private sector (multinational/foreign company)	130 (15.2)	352 (24.7)	182 (16.1)	297 (22.9)	111 (8.0)	194 (16.6)	118 (9.6)	249 (19.0)
Private sector (local)	361 (42.2)	552 (38.8)	390 (34.4)	464 (35.7)	409 (29.6)	416 (35.5)	372 (30.4)	405 (30.8)
Own business	69 (8.1)	36 (2.5)	50 (4.4)	42 (3.1)	42 (3.0)	32 (2.7)	49 (4.0)	39 (2.9)
Government link company	-	-	29 (2.6)	27 (2.1)	21 (1.5)	31 (2.7)	22 (1.8)	16 (1.2)
NGO	-	-	29 (2.6)	15 (2.1)	9 (0.7)	16 (1.4)	21 (1.7)	22 (1.7)
Other	-	-	16 (1.3)	14 (1.1)	15 (1.1)	18 (1.5)	16 (1.3)	19 (1.5)
TOTAL	855 (100.0)	1423 (100.0)	1133 (100.0)	1298 (100.0)	1384 (100.0)	1172 (100.0)	1224 (100.0)	1314 (100.0)

Table 2.38. UKM graduates involved in business

Year	2007	%	2008	%	2009	%	2010	%
Non-sciences	69	8.1	50	4.4	42	3	49	4
Science	36	2.5	42	3.1	32	2.7	39	2.9
Total	105		92		74		88	

2.11.1 History of the entrepreneurship course in the faculty of Economics and Management at UKM

The entrepreneurship course started in the Faculty of Economics and Management in 2003. During this period, the course was optional for students. The objective of the course was to understand the basics of entrepreneurship. Then, in 2007, the courses were changed to compulsory courses for all students. The Faculty of Economics and Business also offered a degree and master course in Entrepreneurship and Innovation starting in 2011. Table 2.39 showed the difference between the courses that were taught in the faculty before and after the implementation of the Entrepreneurship Development Policy in 2010.

Table 2.39 Comparison between the compulsory courses offered at UKM

Year	Course code	Status	Credit hour	Content
2003	CH3414 Entrepreneurship	Optional	3	Basics of entrepreneurship. Student is exposed to the basics of entrepreneurship, environment, involvement of minorities, home businesses, business development and issues related to business. Students were also taught about the methods to start a business such as starting a new business, buying a ready business or franchise and developing business plan.
2007	EPPD2013 Entrepreneurship	Compulsory	3	Basics of entrepreneurship. Student is exposed to the basics of entrepreneurship, environment, involvement of minorities, home businesses, business development and issues related to business. Students were also taught about the methods to start a business such as starting a new business, buying a ready business or franchise and developing business plan.
2012	CMIE1013 Basic entrepreneurship and innovation	Compulsory	2	Early exposure to entrepreneurship and innovation based on courses adapted from the United States. The objective of the course is to give students the basic ideas of

				entrepreneurship and increase their intention towards becoming an entrepreneur as a career option. Student were taught about teaming and leadership, strategy and management, marketing and market research, finance, product development and presentation. The lessons are delivered through online modules. The students are also exposed to the business environment through games and simulation by software called Mogul. During the course, students were also exposed to successful entrepreneurs through a seminar.
2014	CMIE1013 Basic entrepreneurship and innovation	Compulsory	2	Starting in 2014, the syllabus of the course was changed to suit the Malaysia environment.

2.11.2 History of CESMED (Centre for Entrepreneurship and SMEs Development)

CESMED was established in October 2010 as a Centre of Excellence that combines education, entrepreneurship and SMEs. The development of the centre was part of the requirement of the Entrepreneurship Development Policy implemented by the MOHE. The first entrepreneurship course by CESMED was offered in October 2011. At the beginning, UKM CESMED offered four courses to students, and three of the courses were adopted and adapted from Steven Institute of Technology (SIT) in the United States. According to Nasbah (2012) and personal communication with the Prof Dr Mohd Fauzi (director of CESMED) and Dr Salmijah (Ex- Deputy Director, CESMED), in 2012 the main objective of the courses was to increase the students' intention to become entrepreneurs. UKM was the first public university that created one compulsory course across disciplines to inculcate entrepreneurship for first-year students (Nasbah, 2012).

Since the target students were all the first-year students in the university, a lecturer from the faculty was chosen as a fellow for CESMED and trained on how to teach the course. At the beginning, the training was conducted by lecturers from SIT who developed the courses. As of 2013, the trainer has received three trainings about the method of how to teach the courses. The first two trainings were conducted by the master trainer from SIT. After that, CESMED sent five lecturers to SIT to learn about the teaching method and to come back and teach the new trainer and the refresher course for all trainers in CESMED.

Initially, CESMED had 130 fellows and 35 teaching assistants from various academic levels and backgrounds. The fellows for the courses were chosen based on volunteers and some were based on the recommendation of the dean of the faculties.

Initially, the courses that were offered by CESMED are presented in Table 2.40 below.

Table 2.40. Course offered by CESMED

Course	Target student	Period	Content
Basic entrepreneurship and innovation (CMIE 1012)	Compulsory for all students	1 semester	Focus on marketing and financial management. In the basic course, the student learns about entrepreneurship through online instruction. They are also exposed to the business environment through an online game and simulation called MOGUL. (details are in the Table in the next section to show the content of the course and the weekly activity)
Junior start up (CMIE2016)	Optional for 2nd year students	2 semesters	This is an extension of the basic course that focuses on product marketing. The objectives of the course are for the students to be able to use the method and technique to plan how to develop and operate a marketing company in a creative and innovative way. Students will be exposed to how to identify business opportunities, marketing, advertising, effective teamwork, finance, product development, intellectual property

			and related law as well as effective presentations. The course will be delivered through e-learning, quizzes, discussions using a case study and setting up a team and company to market a product. The students will learn how to do product marketing, create homepages and prepare business plans for pitching purposes to potential investors. The course stresses learning through experience.
Senior start up (CMIE2036)	Elective for 3rd and final year students	2 semesters	The objective of the course is to give the students the ability to apply the basic knowledge in entrepreneurship to develop products or services and to get customers for the product in a creative and innovative way. This course is conducted using e-learning and discussion in class, which involves identification of business opportunities, product or service development, teambuilding, intellectual property, marketing, financial management and business plan preparation.
SME Consulting		1 semester	The course objective is to give the student exposure to real business through training in SME that will be chosen by the lecturer. The courses focus on learning through experience. In the beginning of the course the student will do a SWOT analysis and market research for the company. The results will be shared with the owner of the SME. In addition, a countermeasure will be proposed to help the SME improve the condition of business. With the agreement of the SME owner, the students will do a few activities such as promotion, homepage, financial management and other processes that can help the SME improve its condition. At the end, the students will prepare a report to be presented in front of the panel.

As targeted by the ministry to produce entrepreneurial and graduate entrepreneurs, CESMED have arranged the courses as the following diagram in Figure 2.12 illustrates so that students who are really interested in entrepreneurship can follow and be entrepreneurs by the time they finish the programme. This is a difference between the courses provided compared to other Malaysia public universities.

Figure 2.12. CESMED course complete plan

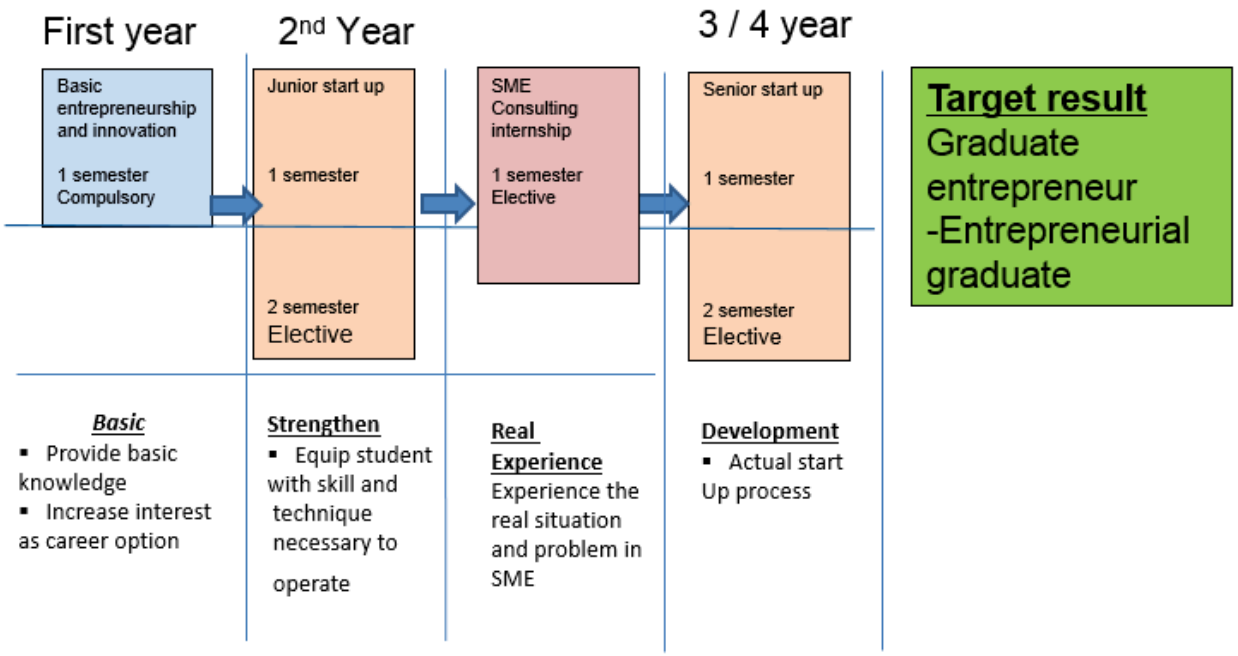


Table 2.41 are the contents from the courses translated into English. The original version in the Malay language is in the appendix. The course consists of a combination of entrepreneurial skill and theory leaning and inspiration by an actual successful entrepreneur. The inspiration aspect comprises around 14% of the total course as can be seen from the class schedule below. Based on the syllabus, it covers what should covered as pointed out by Liñan in Leon and Gorgievski (2007). Table 2.42 is the sample of the class schedule for CMIE 1012.

Table 2.41. CMIE 1012 Course content

Education programme	**Bachelor**
Course code: **Tittle of course:** **Credit Hour:**	**CMIE 1012** **BASIC ENTREPRENEURSHIP AND INNOVATION**
Prerequisites	**N/A**
Learning outcomes	• Upon completion of this course, students are capable of: • Understand the basic concepts in entrepreneurship. • Explain the relationship between various components required in entrepreneurship. • Apply knowledge of entrepreneurship through business simulations online • Interpret business simulation output significantly • Make an oral presentation to convince investors to make business investments.
Synopsis of Course Contents:	• The course aims to introduce entrepreneurship to all students. • The main objective is to provide basic knowledge of entrepreneurship to students, and for students to generate interest in entrepreneurship as a career option that should be considered. Concepts and theories of entrepreneurship include team building (teaming) and leadership, strategy and management, marketing and market research, finance, manufacturing/production and oral presentation skills that are taught through an online module. Various components learned in class will be applied in business simulations software by individually and in groups. Regular seminar series and/or live video involving successful

	entrepreneurs from home and abroad will be held to inspire students in entrepreneurship. During this course, the emphasis is on learning through experience.

Table 2.42. CMIE 1012 class schedule

Week	Date/ (Place)	Subject	Class activities	Students Homework
1	18 Feb- 22 Feb FACULTIES	Introduction	1. Introduction Lecture by Course Coordinators / Master Teachers /Lecturers 2. Introduction of Lecturers and Teaching Assistants 3. To Identify students into Classes/Sets 4. To determine Teams amongst students	• Complete **Teaming Module** (18 Feb – 11 Marc) • Complete **Introduction Module** (18 Feb – 11 Marc) • Complete **Pre-Class Survey** (18 Feb – 28 Feb)
2	27 Feb DECTAR **(2.00 -5.00 pm)**	**Entrepreneur I Presentation – Forum: 4 Entrepreneurs (From International Global Women Summit)**		• Complete **Marketing Module** (27 Feb – 11 Marc)
3	4 Marc - 8 Marc FACULTIES	Start-up Business I	1. Discuss Entre I presentations - 10min 2. Set up your team exercise - 50 min 3. Discuss Marketing Module - 30 min 4. Work on completing templates (2 through 9) - 30 min	• Complete **Oral Presentation Module** (4 Marc – 18 Marc) • Complete **Strategy Module** (4 Marc – 18 Marc)
4	11 Marc- 15 Marc FACULTIES	Start-up Business II	1. Discuss Strategy Module - 20 min 2.Work on completing templates (10 and 11) - 15 min 3. Discuss Oral Presentation Module 4. Draft business presentation -75 min	• Complete **Simulation Module** (11 Marc – 25 Marc)
5	18 Marc 22 Marc FACULTIES	Start your Business III	Start Your Business Presentations Instructors use grading teaching guide (2 hours)	Teams work on their start-up presentation.
6	25 Marc 29 Marc FACULTIES	Start your Business IV	Start Your Business Presentations – Instructors to use grading teaching guide. (2 hours)	• Complete **Financial Module** (25 Marc – 8 Apr)
7	27 Marc & 4 Apr DECTAR **(2.00 -5.00 pm)**	**Entrepreneur II Presentation** FSSK, FPI, FEP, FUU, FPEND - FST, FTSM & FKAB- **27 Marc** FPER, FFAR, FGG, FSK – **4 Apr**		• Complete **Operation& Manufacturing Module** (3 Apr – 17 Apr)

8	8 April 12 April	**SEMESTER BREAK**		
9	15 Apr 19 Apr FACULTIES	Grow your Business I	1.Discuss Entrepreneur II presentation -10 min 2. Discuss Financial Module 1 hour - 10 min 3. Mogul class demonstration– 40 min	• Watch Mogul videos, read Mogul manual and run solo through the 4th quarter.
10	22 Apr 27 Apr DECTAR	Grow your Business II	1. Discuss operations & Manufacturing module - 30 min 2. Review results from Mogul - 30 min 3. Work on templates (2 through 10) - 35 min 4. Discuss deliverables for next session - 15 min	• Run Solo to practice until satisfied
11	29 Apr 3 May FACULTIES	Grow your Business III	1. Discuss simulation practice results -30 min - 2.Work on revising templates 4 through 11 - 30 min 3. Prepare new set of quarters 2 decisions. - 60 min	• Submit Quarter 2 decision
12	6 May 10 May FACULTIES	Grow your Business IV	1. Discussion of quarter 2 (Team Mode) decision-30 min - 2. Review templates 12 through 16– 30 min 3. Prepare quarter 3 decisions– 60 min	• Submit Quarter 3 decision
13	13 May 17 May FACULTIES	Grow your Business V	Final Presentations – (1 hour and 45 min)	• Teams prepare for final presentation • Discuss results • Submit Quarter 4 decision
14	20 May 24 May FACULTIES	Grow your Business VI	1. Final Presentations – (1 hour and 45 min)	• Teams prepare for final • Presentation • Complete **Post Class Survey** (20 May – 3 Jun)
15	**29 MAY DECTAR (Whole week)**	**Super Wednesday**	**1. Teams make quarter 2, 3 and 4 decisions in the morning. 2. Entrepreneur Presentation 3. Grand Simulation Final, Awards 4. Conclusions and Wrap-Up (15 min)**	

Notes:

- Class of 100 students with 2 teachers (team teaching) per class.
- Entrepreneur Presentation total number Entrepreneur Presentations = 3 in DECTAR
- Alternatively, 2 big audience presentation by entrepreneur and each faculty organizes 1 at their respective faculty 3th April 2013.

- To prepare standard questions for students from the Entrepreneur lecture
- To open Quizzes on a 2-week window only.
- Two weeks of oral presentations for each
- Starting your business and growing your business

2.11.3 Information on the trainer for the course

The level and the status of the trainers for the course vary from master qualifications to PhD qualifications. The level of lecturer also differs from lecturer to professor level. The number of trainers as of 2013 is 75, of which 22 are male. The number has been reduced compared to the initial number, which was more than 100 people when the course initially started. The details for the trainers are shown in Table 2.43.

Table 2.43. Trainers' degree by school

	Faculty	**Number of lecturers**	**PhD holder/(Prof.)**
1	Faculty of Economic and Management	9	7 /(1)
2	Faculty of Education	3	2(1)
3	Faculty of Engineering and Built Environment	6	3/(1)
4	Faculty of Health Sciences	8	5(0)
5	Faculty of Information Science and Technology	6	1/(0)
6	Faculty of Islamic Study	6	3/(0)
7	Faculty of Science and Technology	12	12/(3)
8	Faculty of Social Science and Humanities	11	6/(0)
9	Faculty of Medicine	7	4(0)
10	Faculty of Pharmacy	2	2/(0)
11	Faculty of Dentistry	2	2/(0)
12	Faculty of Law	2	1/ (0)

CHAPTER 3: THEORETICAL FRAMEWORK

This chapter explains the dominant theory related to intention (Theory of Planned Behaviour, TPB) and the progress, followed by the explanation of why TPB is chosen as the framework for the study. In addition, the framework of the study and main hypothesis are explained.

3.0 Introduction

As mentioned in the literature review in chapter 2, there are a few models related to entrepreneurial intention (Bird, 1988; Shapero & Sokol, 1982; Katz, 1990; Learned, 1992; Fishbein & Ajzen, 1975; Ajzen, 1991; Fishbein, 2000). Even though there were many theories mentioned in the literature, the most dominant theory is introduced by Icek Ajzen in 1991 called the Theory of Planned Behavior (Kolvereid & Isaksen, 2006; Krueger & Carsrud, 1993; Krueger, 2003). There are also variations of entrepreneurship education, so Fayolle et al. (2006) suggested using TPB as the main framework to compare EE. This theory assumes that attitude(att), subjective norm(SN) and perceived behaviour control(PBC) will affect intention, but intention affects behaviour. This study will use the Theory of Planned Behavior (TPB) as the main theory for the research.

3.1 History of TPB

In brief, the Theory of Planned Behavior begins with development of the Theory of Reasoned Action by Fishbein and Ajzen (1975). Then, in 1991, PBC was added by Ajzen to increase the predictive power of intention. The models are shown in figure 3.1:

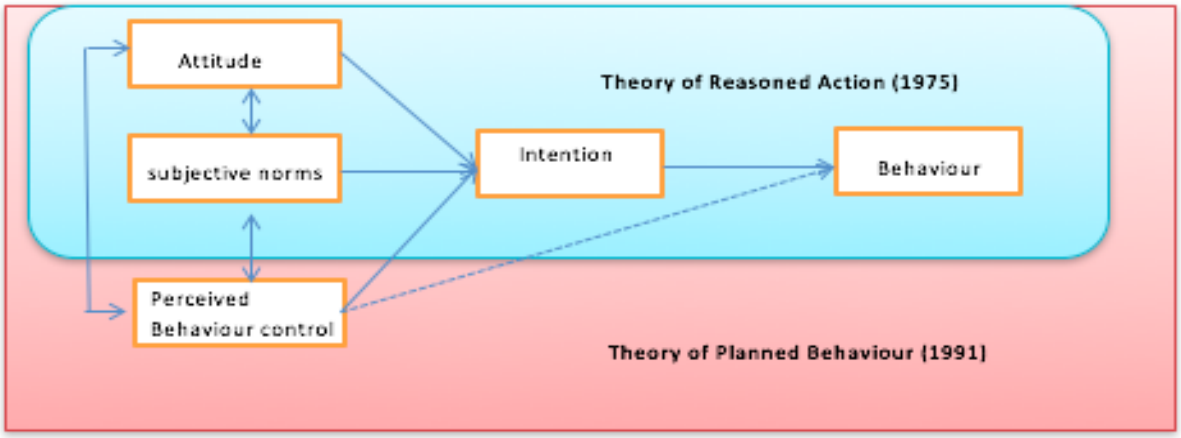


Figure 3.1. Theory of Reasonable Action and Theory of Planned Behavior

3.1.1 Theory of Reasoned Action (TRA)

This theory was developed by Fishbein and Ajzen in 1975. It assumes that people are rational and that reasoning is the primary determinant of behavioural intention (Ajzen & Fishbein, 1980, p. 5). The theory is based on volitional (voluntary) behaviour and not applicable to random or spontaneous behaviour. The theory originally consisted of two antecedents of intention that are formed by two factors: attitudinal (attitude towards behaviour) and normative (subjective norm), as illustrated in figure 3.2.

The attitudinal construct refers to the person's attitude towards executing behaviour. The subjective norm refers to how a person perceiving his or her social surrounding would react if he or she performs the behaviour. Behaviour intention refers to the degree of a person's intention in performing an action. The general assumption of this theory is that the direct determinant of behavioural intention (BI) is influenced by the subjective norm (SN) and attitude (A). This theory assumes that the direct influence on behaviour is behavioural intention. The stronger the degree of subjective norm and attitude, the higher the intention to perform a certain behaviour. In simple terms, the person's voluntary behaviour is influenced

by his or her attitude and the perception of social pressure if he or she perform the volitional behaviour (I = SN +A).

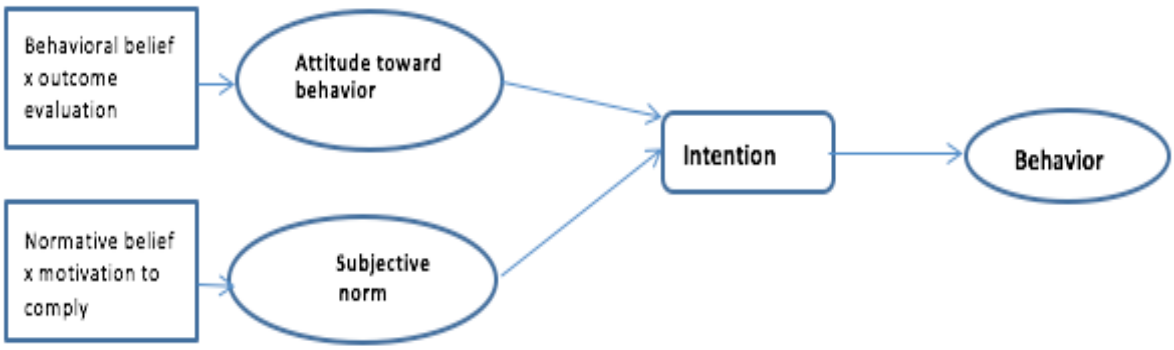


Figure 3.2. Theory of Reasoned Action

3.1.2 Theory of Planned Behavior (TPB)

The Theory of Planned Behavior was introduced by Ajzen (1991). This theory is widely used in entrepreneurship and non-entrepreneurship fields like education, health, psychology, IT, politics etc. This theory is an improved version of the Theory of Reasoned Action by Fishbein and Ajzen (1975), since that theory is only suitable for volitional behaviour. In 1991, Ajzen added the third antecedent for intention, which is perceived behaviour control (PBC) and retained all the other constructs of TRA. Ajzen found that not all behaviour is volitional. PBC considers that a person does not have volitional control over every situation. This newly developed theory is called the Theory of Planned Behavior, as shown previously in Figure 3.1. The constructs of attitude and perceived behaviour control have similarities with the perceived desirability and perceived feasibility of the Shapero Entrepreneurial Event (SEE) model.

A study by Krueger et al. (2000) showed that TPB and SEE are robust in measuring entrepreneurial intention. The different is how these theories perceive entrepreneurial

behaviour. Under TPB, entrepreneurial behaviour is considered a planned behaviour, and SEE as an outcome of a life disrupting event. Even though both theories are compatible in measuring intention, the use of TPB is more dominant in this field (Krueger & Carsrud, 1993; Krueger et al., 2000).

The general concept of the theory is that the higher the intention to perform the behaviour is, the higher the possibility the behaviour will be performed. This theory is general and can be used with minor and major behaviour decisions. TPB focuses on intention as the central factor. Intention refers to the likelihood of executing the behaviour; it is the antecedent of behaviour. According to Ajzen (1991, pp. 181, 188), 'intentions are assumed to capture the motivational factors that influence a behavior; they are indications of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the behavior' and 'the relative importance of attitude, subjective norm and perceived behavioral control in the prediction of intention is expected to vary across behaviors and situations'.

The antecedents are based on a set of beliefs in which changes can change the behaviour. The evaluation of the impact of antecedents on intention is based on positive and negative beliefs about performing the behaviour. In TPB, intention has three antecedents or motivational factors: attitude toward behaviour, subjective norm and perceived behavioural control.

3.1.2.1 Attitude towards behaviour

This construct is formed by the positive or negative evaluation a person has about the behaviour and the outcome of performing such behaviour. According to East (1990), as cited in Holdershaw and Gendall (2008), people have positive and negative feelings concerning an object such as a person or action. People will perform a behaviour if they associate it with a positive feeling and outcome. This belief related to a person's attitude is called a behavioural

belief. Behavioural belief assumes that behavioural performance is associated with certain outcomes. The outcome evaluation refers to the value associated with the behavioural outcome. A simple explanation is provided as in Table 3.1. below:

Table 3.1. Example of intention base on behavioural belief and outcome evaluation

Behavioural belief	Outcome evaluation	Intention
Positive If I sell oranges I can get income	**Positive** The additional income is good for my saving	**Positive attitude toward performing specific action** Greater likelihood to sell oranges
Negative If I want to sell online I will need to register my company	**Negative** Registering a company will require me to declare income for income tax	**Negative attitude to performing specific action** Greater likelihood not to sell online

3.1.2.2 Subjective norm

This construct measures the influence of belief and motivation on a person to conform to the social surroundings towards performing a behaviour. The social surroundings could be parents, siblings, friend etc. This belief is called normative belief and refers to whether other people close to that person will approve or disapprove of certain behaviours. Motivation to comply refers to a person's motivation to follow or fulfil what other people think he or she should do. People will likely perform a behaviour if they associate the normative belief as positive and want to comply with the social environment pressure. The degree of influence people close to the decision maker have plays an important role in the behavioural decision. This construct, however, would not be useful if the person has a high internal locus of control as mentioned by Ajzen (1987) and Krueger et al. (2000). The example as in Table 3.2.

Table 3.2 Example of intention base on normative belief and motivation to comply

Normative belief	Motivation to comply	Intention

Positive My parents want me to be an entrepreneur	**Positive** I want to listen to my parents' advice	**Positive subjective norm towards performing a specific action** Greater likelihood to apply for business course in the university
Negative My parents do not want me to open a business with my friend	**Negative** I do not care what my parents want	**No relevant subjective norm to perform a specific action** Likelihood to open the business with the friend not affected by parents' opinions.

3.1.2.3 Perceived Behaviour Control

This additional construct is what makes this theory different from TRA. As mentioned by Ajzen (1991), this antecedent could be used to predict non-volitional behaviour to improve the weakness of TRA. This construct plays a major role in determining behaviour and could have two effects on behaviour. The first could predict intention and the second could be a direct predictor of the behaviour. A certain behaviour will not be performed if the perceived behavioural control is low because a person who does not think he or she has control over the behaviour will not execute it, even though the subjective norm and attitude towards the behaviour are high. An example given by Ajzen (1991) is a person who has a higher perceived control to learn to ski can master it compared to those who have a low control. This construct is similar to perceived feasibility as proposed by Shapero (1982). When introduced in 1991, PBC referred to the control and capabilities over a behaviour. However, in 2002, Ajzen redefined the definition as 'perceived control over performance of a behavior' to avoid a misleading meaning on control over the outcome results.

The perceived behavioural control measures the belief of a person's capability, whether it is easy or difficult to perform a behaviour. The belief considers the internal or external factors that may facilitate or inhibit the behaviour. The belief could be based on his or her experience or base on other aspects. For instance, I believe I can learn three languages even though I am

busy with other study. If I believe that I have the time to learn and the language is easy to learn, then I will have a positive perceived behavioural control to perform the behaviour (learn languages). The example as in Table 3.3.

Table 3.3. Example of intention base on control belief and perceived power

Control belief	**Perceived power**	**Intention**
The likelihood to play football when not a good player	It is easy to get the ball when there are not many good players	Greater likelihood to play football
The likelihood to play football when it is raining	It is difficult to play football when it is raining	Greater likelihood of not playing football when raining

Overall, therefore, these three motivational antecedents serve to conform the intention to perform a behaviour. The higher the level of intention, the higher the probability to execute the behaviour. As a result, the intention will be a combination of the three antecedents. In summary, a person's intention can be explained by an interaction of these beliefs as in figure 3.3.

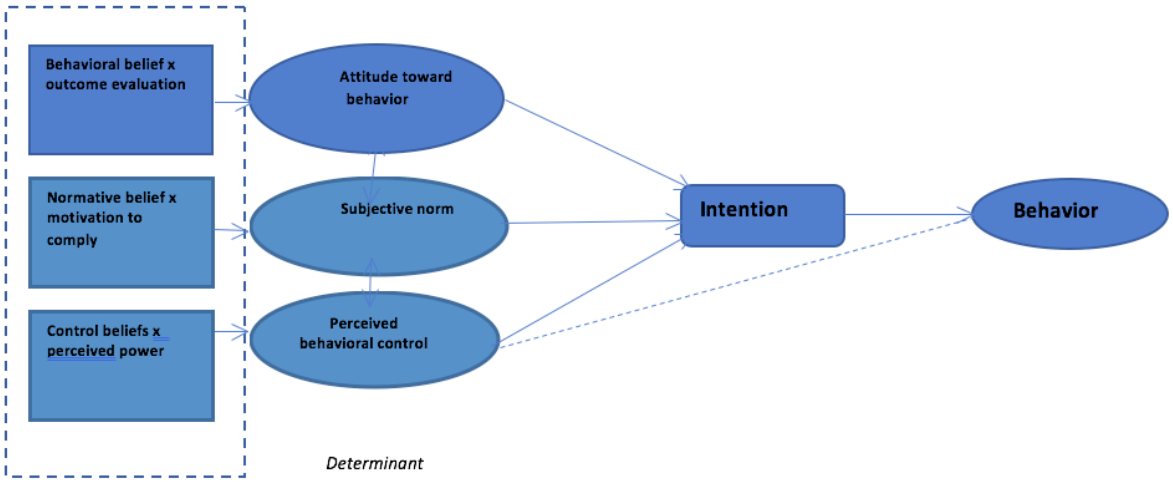


Figure 3.3. Ajzen's theory of planned behaviour (Ajzen, 1991)

3.2 Empirical studies of TPB used in research

Some of the studies that use TPB are presented in Table 3.2 below:

Table 3.4. Empirical studies of TPB used in research

Author	Year	Content of research	Target respondent	Finding
Krueger et al.	2000	Business as career option	Business student	Compare Shapero EE model to TPB to predict EI
Armitage and Conner	2001	Meta-analysis of 185 studies		TPB explain 27% of behavior and 39% intention
Autio et al.	2001	Business as career option	University student in multiple countries	TPB able to explain 21% -42 variances in EI across multi sample
Fayolle and Gailly	2005	Framework to analyze entrepreneurship program	Student attending 1 day course	TPB can be used to access entrepreneurship even in small scale
Souitaris et al.	2007	Effectiveness of entrepreneurship education program	Former students	Conceptual framework
Turker & Selcuk	2009	Impact of contextual factor on EI	University students	educational and structural support factors affect the entrepreneurial intention
Liñan and Chen	2009	Entrepreneur as career choice	2 country sample	Support usage of TPB to predict intention even with different cultural setting
Gelderen et al.	2008	Entrepreneurial intention of business student	Business student in Amsterdam	Entrepreneurial alertness and financial security explain the intention
Liñan et al.	2011	Test using EIQ and usage of factor regression procedure	University student in Andalusia	Confirm perceived feasibility and desirability main factor to explain EI
Merle Küttim et al.	2014	Impact of content on intention	17 European countries	Support EE positive impact on EI but no different among gender

3.3 Reason for using TPB

Intention has been identified as the best predictor of behaviour in robust research (Ajzen, 1991; Krueger et al., 2000; Bird, 1988; Katz & Gartner, 1988; Armitage & Conner, 2001). Intention is best predictor compared to traits, demographics or situations (Krueger & Carsrud, 1993; Krueger et al., 2000). Over the past 20 years, this theory is the most dominant in

intention behaviour and has proven robust in measuring planned behaviour through intention (Armitage & Conner, 2001). A meta-analysis study by Armitage and Conner (2001) shows that 39% of variance in intention and 27% of variance in behaviour can be explained by TPB. Behaviour to venture into business falls under planned and intentional behaviour (Krueger et al., 2000; Autio et al., 2001; Kolvereid & Isaksen, 2006). For that reason, this theory is suitable for measuring the entrepreneurial intention and behaviour. Up-to-date literature has shown that this theory is the most dominant theory used in evaluating intention through entrepreneurship education.

Although TRA has similarities with TPB, it was limited to measuring volitional behaviour (Ajzen, 1991). In contrast, TPB is useful in measuring the entrepreneurial behaviour because it is a non-volitional behaviour. The Shapero Entrepreneurial Event (SEE) also coincides and is compatible with TPB. However, as argued by Fayolle et al. (2006), compared to the Shapero Entrepreneurial Event (SEE) model, this theory is more suitable for evolution towards performing an entrepreneurial behaviour. In addition, TPB has clear guidelines for the measurement and construction of instruments (Ajzen, 2002) compared to SEE, which are a bit confusing as reported by Gelderan et al. (2008). Compared to the Shapero model, TPB has also proven to have more explanatory variance compared to the Shapero Entrepreneurial Event model (Krueger, 2009).

Other common problems with using a new theory is the lack of validity of tools and measurements in doing the research, which is why the Integrated Behaviour Model by Fishbein (2000) was not used for this study. It would be time-consuming and expensive, and the researcher has a limited study period and financial means. In contrast, the Theory of Planned Behavior has been robustly validated and tested in depth in measuring entrepreneurship education (Fayolle et al., 2006; Liñan & Chen, 2009; Iakovleva et al., 2011; R. Weber, 2012). This research will be using a validated instrument designed by Liñan and

Chen (2009). The instrument has been proven to be suitable to evaluate the effect of entrepreneurship education (Liñan et al., 2011).

Another reason for using this theory is that it fits with the purpose of this study, such as measuring the impact of elements in entrepreneurship education towards the antecedent of intention, even on a small sample scale as pointed out by Fayolle et al. (2006). In this study, the study population researched for the intermediate and higher level courses is small. In their study, Fayolle et al. (2006) also point out that there are variations among regions and educational institutions, so TPB is proposed as the basis for a common framework. The literature research showed that there is a lack of using TPB as a base to study entrepreneurship education in Malaysia. This study intends to fill that gap.

In addition, recent research by Autio et al. (2001), Liñan and Chen (2009), Engle et al. (2010) and Iakovleva et al. (2011) showed that this theory is viable in testing the entrepreneurial intention in many countries and cultural settings. Most importantly, a recent study by Iakovleva et al. (2011) found that this theory is suitable to use in developing countries, and this study is occurring in Malaysia.

The Theory of Planned Behavior also guides the research by focusing on important factors in the framework by identifying the key behavioural, normative and control beliefs that influence intention and behaviour. Understanding this can help future entrepreneurship education studies in changing the intention by incorporating an intervention that changes the value of the beliefs (Ajzen, 2006).

3.4 The research framework

This study is concerned with the intention of students at the University of Kebangsaan Malaysia (UKM) towards entrepreneurial behaviour. Most studies have shown that entrepreneurial intentions can be strengthened through education (Turker & Selcuk, 2009;

Liñan et al., 2011; Ertuna & Gurel, 2011). Most studies in this field have evaluated entrepreneurship education in terms of general evaluation instead of its components, which this study does. These elements are contents, methodology, educators and organisation of the process (Hytti & Kuopusjarvi, 2004). This study builds on previous studies by using the instrument developed by Liñan and Chen (2009) and Liñan et al. (2011) and aims to go into more detail by incorporating the entrepreneurship course element as the exogenous variables. However, this study will only look at the first three elements mentioned by Hytti and Kuopusjarvi (2004) since they relate directly to the course. Intention in this study refers to target behaviour to set up a business, as in Krueger et al. (2000).

According to Ajzen (2011, pg 86), 'the greater the relative weight of a given component, the more likely it is that changing that component will influence intentions and behavior'. Any intervention in any of the three antecedents could result a change in intention and finally the behavior (Ajzen, 2011). Ajzen (2011) points out that background factor can be used as an intervention. In his view, background can include many aspects such as age, gender, ethnicity, past experiences, education etc. As mentioned in example by Ajzen (2011, p. 84), education was considered as 'potentially important background factor'. In this study, the entrepreneurship course and the elements of the course, such as the content, trainer act as the intervention toward the change of intention. Intention could be influenced since the three antecedents are based on perception (Krueger et al., 2000). According to Ajzen (2011), the behaviour can be changed if the intervention changes the behavioural, normative and control beliefs. This study argues that the exogenous factors of content, teaching method and educator are used as the intervention (as figure 3.4) to indirectly impact the intention throughout the course.

The course that is being assessed covers a period of 15 months if the students go through the entire course, or the minimum period is 4 months for the compulsory course. The

learning process throughout the entrepreneurship course could play a role in changing the students' beliefs and perceptions. The conceptual model and hypothesis as in figure 3.5 and figure 3.6.

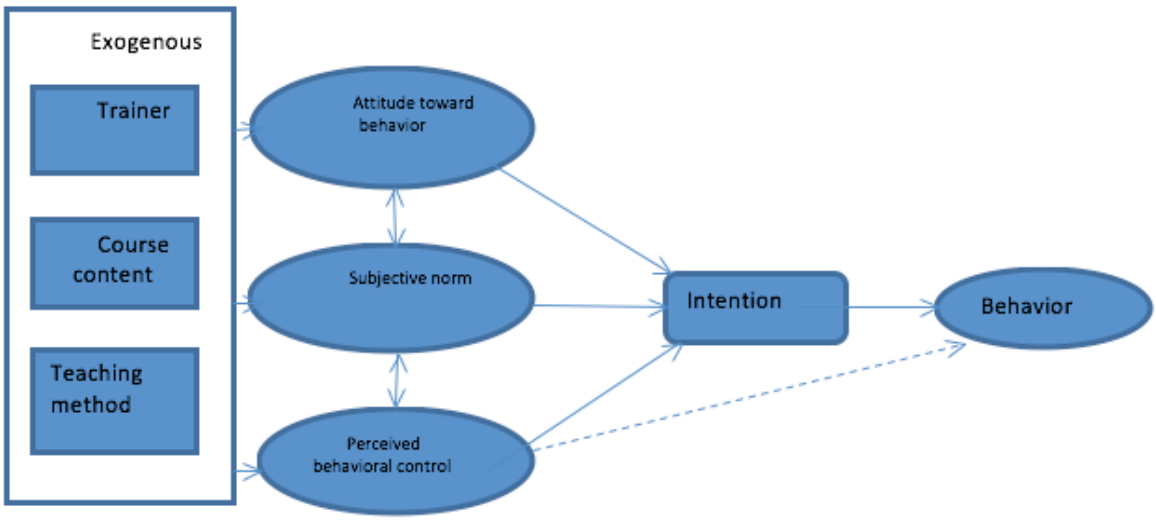


Figure 3.4. Intervention and TPB

3.5 Hypothesis

3.5.1 Impact of the three antecedents on entrepreneurial intention

According to the Theory of Planned Behavior, the positive and negative evaluation of the outcome to start a company will influence the decision to become an entrepreneur. This positive outcome evaluation could be a result of the knowledge, experience and skill conveyed through the content of the course. As a rule of this theory, the positive beliefs of the antecedent of intention will increase the likelihood to perform the behaviour (Ajzen, 1991). Several researchers found that subjective norms have the weakest explanatory power for intention (Liñan et al., 2011). However, this research will try to reconfirm it since the research conducted in Malaysia consisted of mixed respondents with different cultural and social values, which could vary the results as mentioned by Engle et al. (2010). Based on this, the following hypothesis is proposed:

Hypothesis: The motivational antecedent has a positive effect on students' intentions to become entrepreneurs.

H1: The attitude towards behaviour has a positive effect on intention.

H2: The subjective norm has a positive effect on intention.

H3: The perceived behavioural control has a positive effect on intention.

3.5.2 Impact of entrepreneurship education on intention

According to Ajzen (2006, p. 2), 'Interventions designed to change behavior can be directed at one or more of its determinants: attitudes, subjective norms, or perceptions of behavioral control. Changes in these factors should produce changes in behavioral intentions'. In this case, entrepreneurship education is used as an intervention to change the intention. A few studies have highlighted the positive effect of entrepreneurship education on intention (Souitaris et al., 2007; Wu & Wu, 2008; Turker & Selcuk, 2009; Liñan et al., 2011; Ertuna & Gurel, 2011; Saravanakumar & Saravanan, 2012).

Liñan (2007) touches on the entrepreneurial skills that could be developed through entrepreneurship education, which could have an impact on intention. In contrast, there are also studies that showed no effect on trait and intention (Gurel et al., 2010) and found a negative impact on entrepreneurial intention (Oosterbeek et al., 2010), but most studies showed that the effect is positive. A recent study by Merle Küttim et al. (2014) traces the relation of the level of education with entrepreneurial intention and found that the higher the education, the lower the entrepreneurial intention.

Hypothesis: Entrepreneurship education has a positive effect on students' intention to become entrepreneurs.

H4: Entrepreneurship education has a positive effect on attitude.

H5: Entrepreneurship education has a positive effect on subjective norms.

H6: Entrepreneurship education has a positive effect on perceived control behaviour.

3.5.3 Effect of content and method on intention

The three elements of the course that will be studied are the course content, teaching method and educator. The content of the course is really important since it is related to the knowledge, skills and experience the students will gain from the course. As mentioned by Turker and Selcuk (2009), knowledge and skills learned through the course increase the likelihood to become an entrepreneur. Several studies have pointed out that the entrepreneurship course should be different from general business courses since the target outcome of the course is different (McMullam & Long, 1987; Vesper, 1988; Gupta, 1992; Decker & Hostager, 1999). Research by Roxas et al. (2008) reports that entrepreneurship knowledge does influence entrepreneurial intention. A study by Sharif et al. (2010) also reports that some contents of entrepreneurship correlate with entrepreneurial intention.

Various literature mentions that the teaching methods for entrepreneurship and business courses should be different to be effective. A study by Dilts and Fowler (1999) argues that only certain teaching methods are more successful than others at preparing students for an entrepreneurial career. In addition, a study by Franke and Luthje (2004) reveals that certain delivery methods could enhance the graduates' entrepreneurial activities. Based on this, the following hypothesis was proposed

H7: The content will moderate the relationship between motivational antecedents and entrepreneurial intention.

H8: The teaching method will moderate the relationship of motivational antecedent and entrepreneurial intention

3.5.4 Effects of trainer/guest speakers as role models on entrepreneurial intention

The entrepreneurs' social norm or milieu does influence them directly or indirectly to become an entrepreneur. According to Julien (2007), there are three types of influence: emotional, symbolic and sociological, which can come from family, friends, experience, education etc. The teacher or trainer can also be an influence. Trainers are protagonists in EE (Leino et al., 2010).

Teachers, educators or trainers of the course not only function as information providers but also as role models and facilitators in the learning process (Harden & Crosby, 2000). According to Bandura (1986, cited in Harden & Crosby, 2000) role models are essential to enhance the values, attitudes and patterns of thoughts to the students. Role models can also be or give inspiration to the students. As mentioned in Souitaris et al. (2007), inspiration plays an important role in increasing the number of graduate entrepreneurs. Role models can be used as a trigger for student entrepreneurial motivation (Volkmann et al., 2009).

In terms of teaching method, role models are a more efficient way to transmit knowledge than traditional lectures (Falvo et al., 1991), especially when the lecturers also have experience with setting up businesses or have their own businesses (Engle, 2010, cited in Koe et al., 2012). According to Bandura (1971, p. 6), 'observers not only learned to follow the model, they generalized copying responses to new situations, to new models, and to different motivational states'. Interaction between the trainer and the role model can influence the students' interest in entrepreneurship. Successful entrepreneurs can have a positive impact

and become role models for newly starting entreprneurs (Casson, 2011). BarNir et al. (2011) also found that role models have been shown to positively influence intention (Nasurdin et al., 2009), especially for women (BarNir et al., 2011).

According to Sang (2010), dedicated instructors could be role models and help develop a positive personality in students. A recent study by Rahman and Day (2015) showed that lecturers can influence students towards entrepreneurial career through their function as role models.

Intention can be affected by role models by changing the students perceived ability to be involved in business by changing attitudes and beliefs (Krueger et al., 2000). Krueger (2009) suggests that in education, it is important to use experts to guide the teaching to move the learners toward a truly informed intent. The constructivist model teaches us that learners' intention and related attitudes will change, but only insofar as they reflect changes in deeply-held beliefs. To change what we know, especially in the direction of a more informed, expert intent, learners go through multiple critical development experiences that change their deep beliefs.

The role of teachers in formal education is important because they can also contribute to the students' motivation and development of their cognitive self-efficacy (Bandura, 1994). The role of the trainers in class serve to facilitate as sources of information and be role models for the students (Bechard & Toulouse, 2009; Harden & Crosby, 2000). In cases where the trainers or guest speakers are also practitioners or are involved in business, they can also be the role models to the students. Their function as role models through involvement with the students' learning experience (Auken et al., 2006) could influence the students' perceived feasibility and desire (Krueger, 2000; Krueger, Reilly & Carsrud, 2000). The trainer as role model could increase the students' self-efficacy through social modelling (Bandura, 1994).

To be effective, education provided to students should increase their perceived self-efficacy so that they can consider and prepare themselves for a more challenging career such as entrepreneur (Bandura, 1994). According to Bandura, the teacher's self-efficacy influences the success of the student. To ensure that students are successful in their study, lecturers must be prepared themselves for the task. Drucker in Kuratko (2005) said that entrepreneurship can be learned, but the question is can anybody teach it?, since Bandura (1994) said that trainers' self-efficacy and talent are related to the students' cognitive skills development. In the case of this study, the majority of the lecturers are from diverse backgrounds, and fewer than 13% are from business education. In basic training, the trainers for the CMIE 1012 course only received two weeks intensive basic training from the Master trainer from Steven Institute of Technology (SIT).

This study will look at the trainer, either the lecturer or the guest speaker, as the role model if they could function as a catalyst to move the students toward an entrepreneurial career. Based on this, the following hypothesis was proposed:

H9: Trainer as role model moderates the relationship between motivational antecedents and intention.

3.5.5 Relationship between entrepreneurship education and race, major or gender

Wilson et al. (2007) pointed out that no one solution fits all education; it needs to be tailored to the target to achieve a higher result. According to Franke and Luthje (2004), not every student that takes the course has the same results. This difference is not just because of gender but also by major and possibly race.

Research conducted by Kolvereid and Moen (1997), for example, points out that students with an entrepreneurship major have higher entrepreneurial intention compared to other

majors. A study by Zhang et al. (2013) points out that a technological major has a higher intention than other majors.

A study by Severiens and Ten Dam (1994) point out different styles of learning between males and females and points the lack of study for the learning style based on gender. In terms of entrepreneurship, many studies have shown that males' entrepreneurial intention is higher than females. For example, Wilson et al. (2007) found that men have higher entrepreneurial intention based on their study of high school students and MBA students. This is also supported by Strobl, Kronenberg and Peters (2012), who found that men have higher entrepreneurial intention.

Recent research by Yordanova and Tarrazon (2010), Weber (2012) and Zhang et al. (2013) also showed that women have lower entrepreneurial intention. Although in contrast, Gupta et al. (2009) found that in three countries, there was no difference in the level of intention between males and females. However, many studies indicate that men have higher entrepreneurial intention. In addition, Lumsden and Scott (1987) and Robb and Robb (1999) mentioned that male students learn better in economics than female students. However, a study by Küttim et al. (2014) found that entrepreneurial intention is not strongly related to gender. On the other hand, a study by Engle et al. (2011) found that out of 14 countries, only nine showed that males have higher intention than females. Therefore, there is a need to test this in the current situation in Malaysia.

According to Omar (2006), occupations in Malaysia are based on ethnicity, where the Malay are involved in the public sector and the Chinese are involved in the business sector. This has been going since the British colonial period, and it eventually became the ethnic norm. Since the culture of business has been with the Chinese since their first entrance to Malacca (now Malaysia), they should have a higher business knowledge and social norms that have been embedded in their culture. This is due to culture being created by social

interaction as defined by Kyro (1996, p.72), which is 'culture can be regarded as referring to collectively created, accumulated history, a sort of heritage, which is transferred intentionally or unintentionally from past to present, and from present to future'.

Up to now, there are studies that differentiate between foreign students' and local students' intentions. However, no research has been done comparing multicultural people who live in the same country, such as Malaysia, where the population consists of Malay, Chinese, Indian and Indigenous people. Past Malaysian history, as mentioned in chapter 2, explains that previously, the occupations in Malaysia were segregated according to race, and the Chinese dominate the business area.

This study's intent is to compare the entrepreneurial intention between the Malay (sons of soil) and other ethnicities, especially the Chinese, since they have a long history of business before Malaysia's independence.

This study will also look at the different majors of students who take the same course in the university regardless of major and race. The effect of major has no difference according to a study by Conners and Ruth (2012).

As mentioned by Fishbein (2000), there are no universal solutions. Even if two people have the same attitude towards entrepreneurship, they could have different entrepreneurial intentions towards behaviour (Ajzen & Fishbein, 1975). That difference could be across gender, major and races. This study also investigates whether the situation in Malaysia is similar to other previous research, which can be summarized as follows:

1) The Chinese students have higher entrepreneurial intention than the Malay students.

2) Students from the Faculty of Economic and Management have higher entrepreneurial intention compared to other faculties.

3) Male students have higher entrepreneurial intention than female students.

Conceptual model and hypothesis relationship

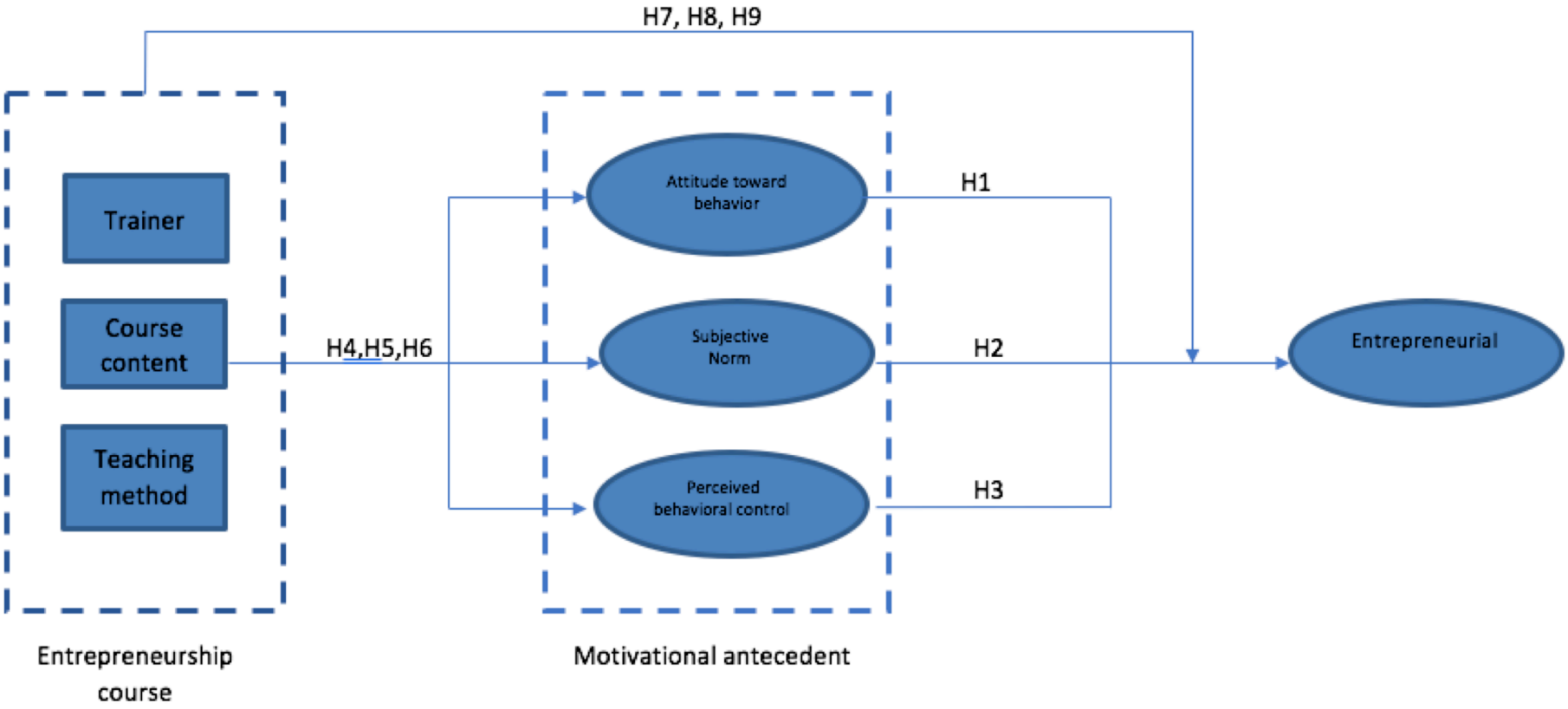


Figure 3.5. Conceptual model of intention model

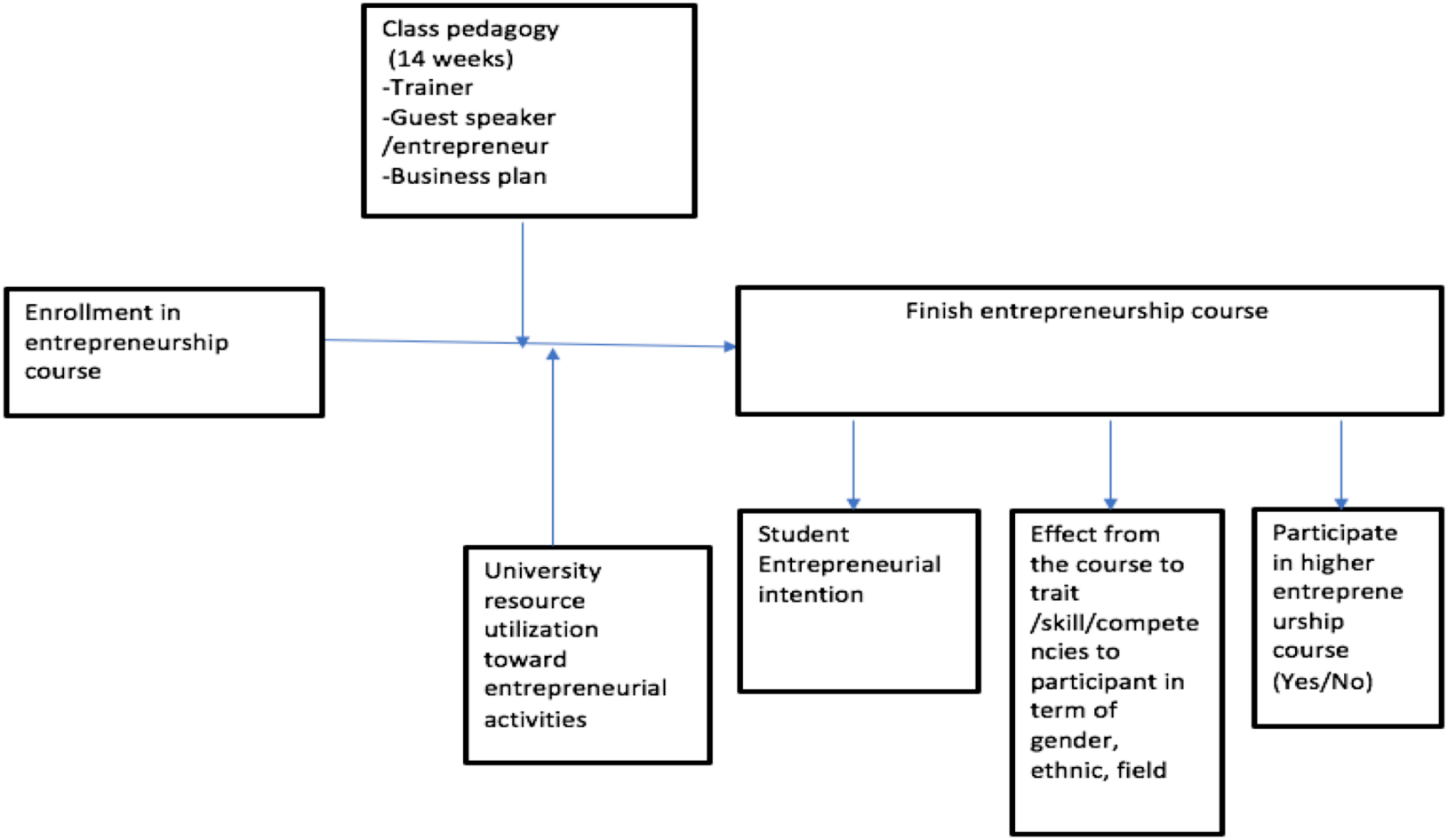

Class pedagogy
(14 weeks)
-Trainer
-Guest speaker
/entrepreneur
-Business plan
Enrollment in entrepreneurship course
Finish entrepreneurship course
University resource utilization toward entrepreneurial activities
Student Entrepreneurial intention
Effect from the course to trait /skill/competencies to participant in term of gender, ethnic, field
Participate in higher entrepreneurship course (Yes/No)

Figure 3.6

Conclusion

This chapter reviews the history and evolution of the Theory of Planned Behavior. The focus of this chapter is to understand the theory based on the literature to support the use of the theory for the study. A literature review was done on the reason for the usage. In addition, the research framework and main hypothesis of the study were also explained.

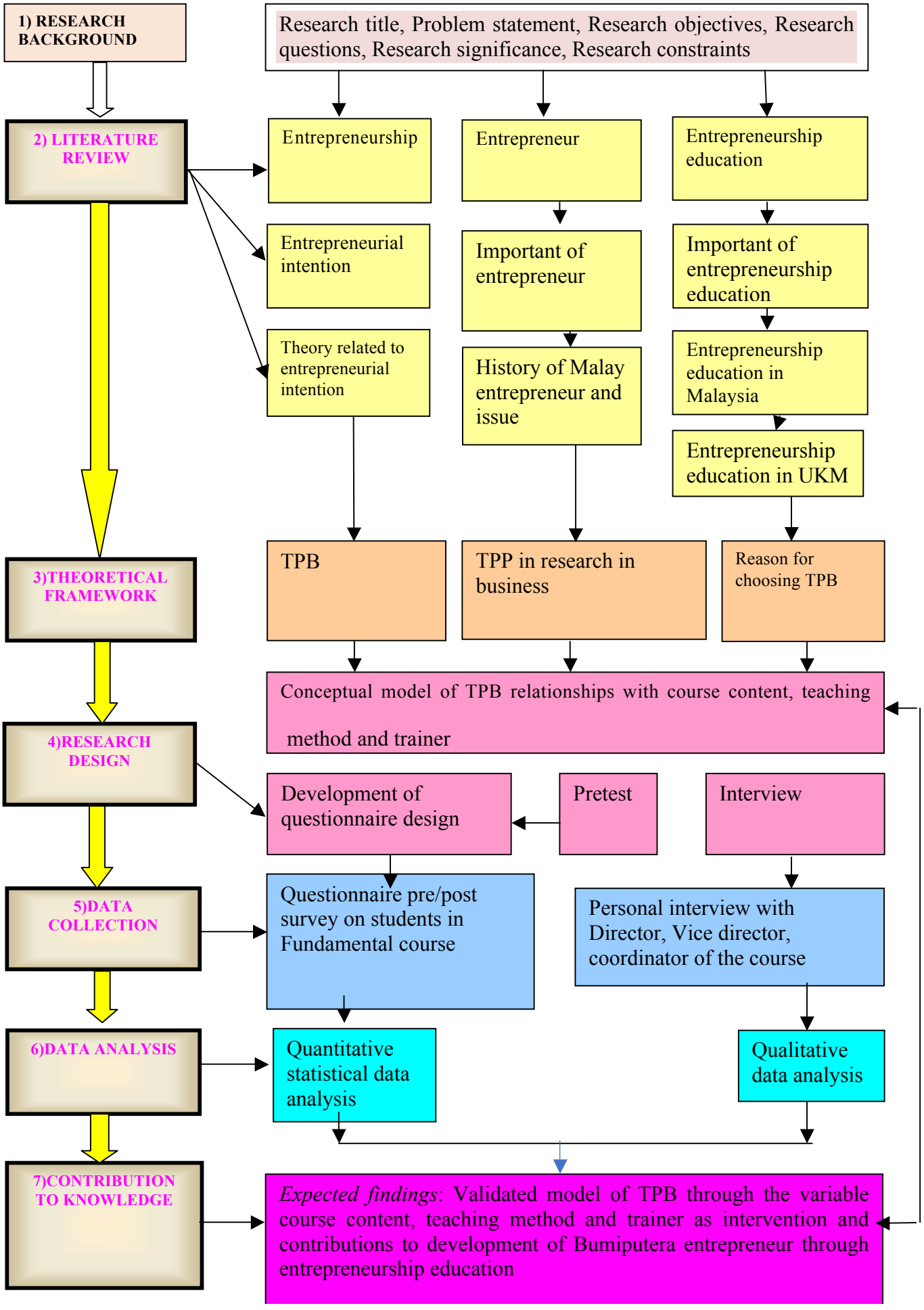
CHAPTER 4: RESEARCH METHODOLOGY

This section will present the research methodology used for this study. The section starts with a discussion of research design, followed by the construction of a questionnaire, selection of respondents, a pilot study and implementation of the survey.

4.0 Research design

The total research design is illustrated in figure 4.1. This section will specifically cover step 4 in figure 4.1.

Figure 4.1. Research design



This study collected both primary and secondary data. Secondary data are 'research by others for their own purposes' (Cooper & Schindler, 2008). This type of data includes newspapers, magazines, articles on the internet, books and online journals. These references are used to write the introduction, literature review and theoretical framework.

For this study, four sources of data collection were used to get the data and information as shown in figure 2. The main data were primary data through the survey and interviews. To collect the primary data, a questionnaire was used as a research instrument to evaluate the relationship between the entrepreneurship course and the entrepreneurial intention. The questions were developed based on a combination of previous studies and new questions by the researcher to measure the issues that are related to this study.

This study adopted a field survey as the research method. The mode of enquiry uses a structured approach for quantitative research. The researcher has chosen to do longitudinal studies to see any changes in the respondents as an effect of the entrepreneurship course.

The pre-course and post-course data collection is suitable to measure the effect of the course on the students as highlighted in the section 2 literature review. Based on previous studies, research in Malaysia is still lacking TPB usage, especially in a pre-course and post-course study. Additional interviews were done with the director of CESMED, vice director and coordinator of the course to gain additional information about the course.

In this study, the contact with students was done through an online survey. The online survey method is one of the more practical ways to conduct this research because of the number of respondents that can be reached and because it is cost efficient. However, there

also are limitations for this method, such as the respondents cannot ask questions, and the researcher also has no control over which respondents will take the survey and take a longer time compared to an interview or face-to-face survey in which the researcher is also present during data collection. To ensure that the respondents can ask questions if needed, the researcher's email address was provided.

The interviews with the director of CESMED, vice director and coordinator, on the other hand, were held face-to-face. The researcher choses to meet the interviewees instead of communicating through other mediums because the interviewees are busy and it is hard to get information through other mediums. The purpose of the meetings is outlined below:

1) Gaining permission for the research

Prior to commencing the study, ethical clearance was sought from the director of CESMED, Prof Dr Mohd Fauzi. This contact was made via email, meeting and an official letter. The survey was only conducted after official approval was received. The meeting with the director occurred twice; once prior to the researcher's further study at the University of Seville, and once prior to the actual data collection. The permission from the director was important to ensure there was approval to conduct the study on the students in the course.

2) Interview with the director and course coordinator

A separate meeting was held with the director, vice director and course coordinator before the research was done to provide the doctoral candidate with general information about the course. For example, the questions in the meeting were about the history of the course, the objective, training of the trainer, course implementation history etc.

2) Gain access to documents and training related to the course

During the meeting, permission was requested for some documents related to the course for the research purpose. A copy of the documents is in the appendix. The information from the documents included course content, course objective, course methodology, textbook, manual for online simulation etc. The syllabus, textbook etc. were analysed to gain information that suits the objective of this study. In addition to the documents, the director allowed the researcher to participate in the training that was attended by trainers of the course. The source of data is shown in figure 4.2. Figure 4.3. shows the process of this study.

The process of data collection for this study can be divided into seven stages starting from developing the questionnaire to reporting the findings, as shown in figure 4.4.

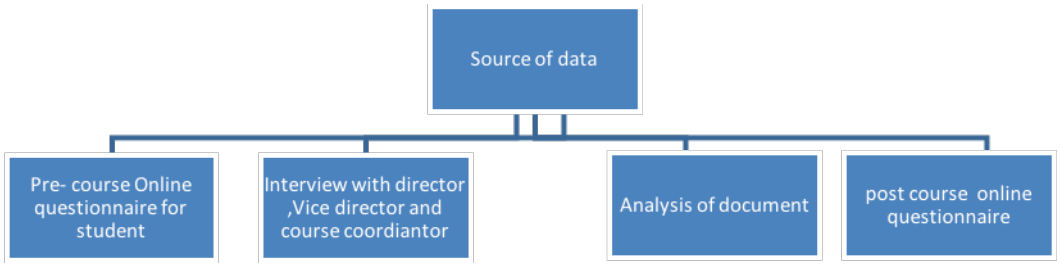


Figure 4.2. Source of data

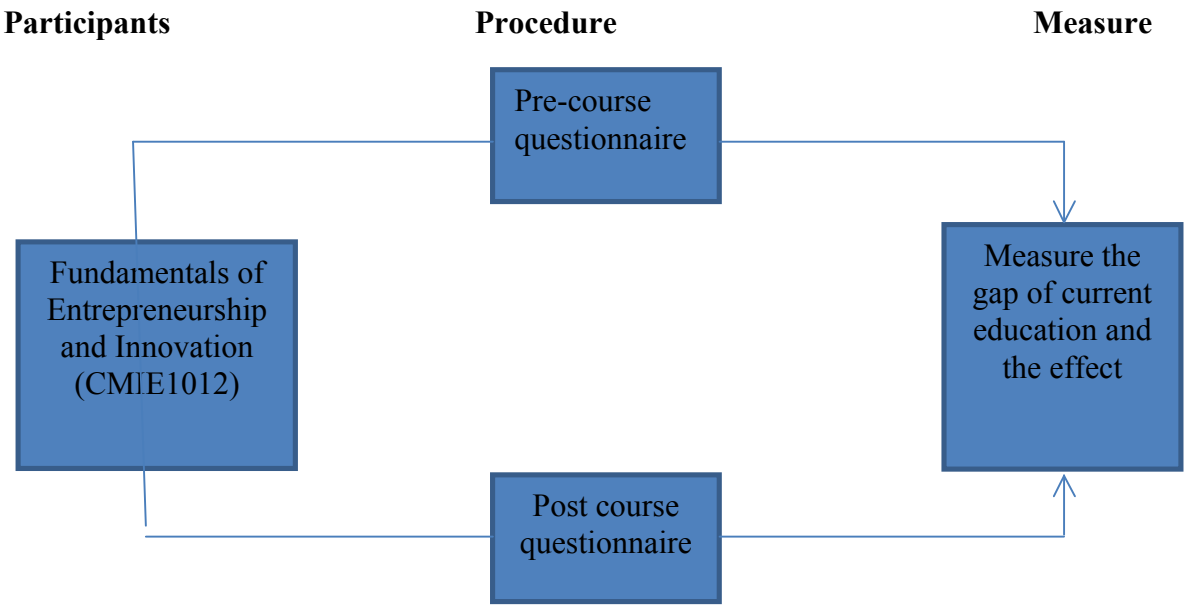


Figure 4.3. Longitudinal study for the student

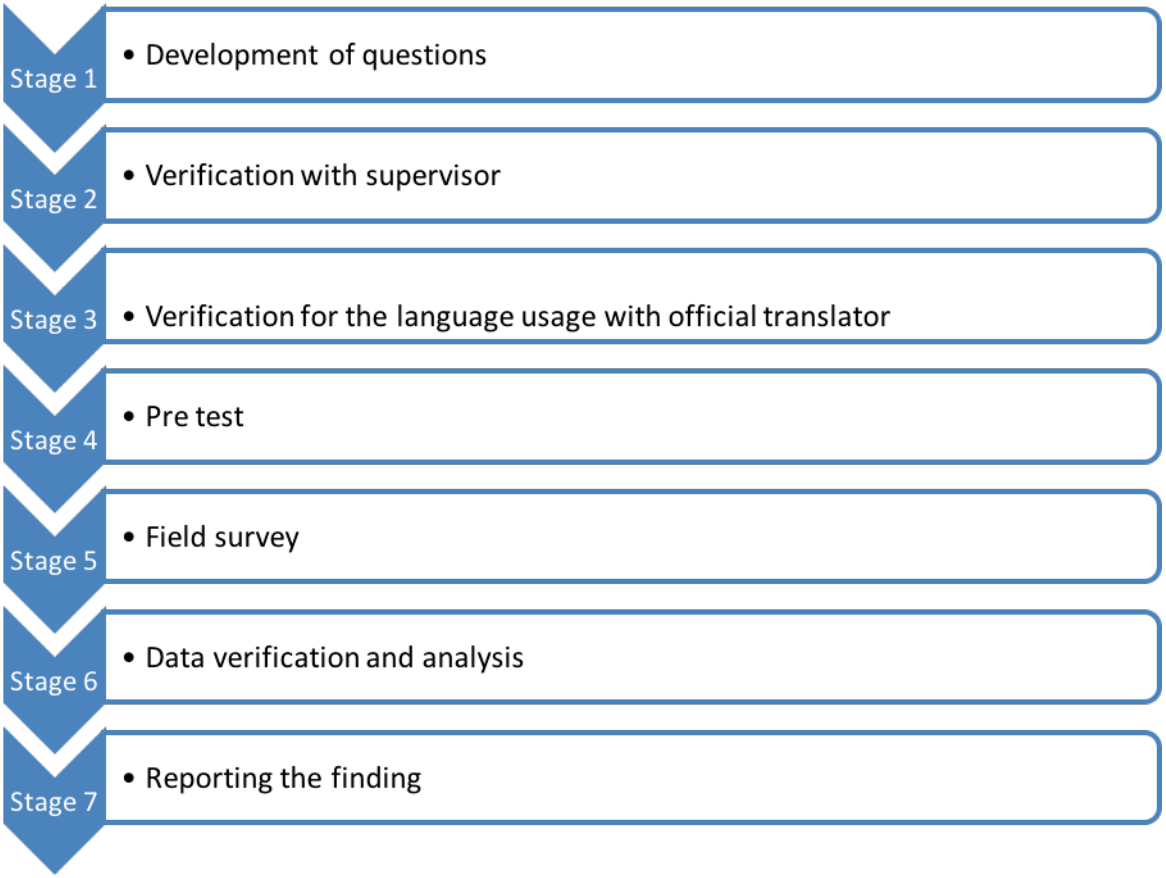


Figure 4.4. Process of data collection

4.1 Research population

For this study, the populations have been fixed because the researcher was financed by UKM, where this study was conducted. There were two options for the research population: the students in the entrepreneurship course under the faculty of Economics and Management or the students in the compulsory course under CESMED. After considering the size of the research population, the researcher decided to study the students in the compulsory entrepreneurship course implemented under CESMED. This course is Fundamentals of Entrepreneurship and Innovation (CMIE 1012), which originally was developed by Steven Institute of Technology (SIT). These target respondents are first-year students from 12 faculties in UKM. This is similar to the study done by Nabi et al. (2016), in which the population was also first-year students. The benefit of choosing this population is that the course is compulsory, so the respondents consist of both students who have an interest in entrepreneurship and students who do not. The faculties and number of students are shown in Table 4.1.

	Faculty	**Number of students**
1)	Faculty of Economic and Management	530
2)	Faculty of Education	135
3)	Faculty of engineering and build environment	318
4)	Faculty of Health Sciences	267
5)	Faculty of Information Science and Technology	194
6)	Faculty of Islamic study	264
7)	Faculty of Science and Technology	593
8)	Faculty of Social Science and Humanities	440
9)	Faculty of Medicine	211
10)	Faculty of Pharmacy	87
11)	Faculty of Dentistry	54
12)	Faculty of Law	99

Table 4.1. Number of students based on faculty

The total number of students in these faculties for the year 2013/14 is 3192 students. This is the third group for this course. The students in this course consist of different races,

genders, states and family backgrounds. The number of students surveyed is based on the number of students on the list received from CESMED UKM.

4.2 Construction of questionnaires

The questionnaire was originally constructed based on EIQ questions that have been validated many times by Liñan and Chen (2009) and Rueda et al. (2015). Article references were searched further to find relevant publications related to this research, such as Gurel et al. (2010) and Souitaris et al. (2007). Additional questions were also created to fit the study objective. The questionnaires were designed to test the developed hypotheses, and most of the questions were adopted and adapted to fit the objective of this study. In total, two questionnaires were developed for pre- and post-course.

During the development of the questionnaire, support was received from my supervisor to verify the adapted questionnaire and the additional questions. Among the criteria that were considered when developing the questions are whether the questions are relevant and meet the objective of the study, whether the terms are well defined and the contribution from the study as mentioned in Leary (2004). All the questions were constructed so the respondents could answer freely based on their thoughts and not on limited options. The type of questions also varied from single choice items, multiple choice items and free items and most questions are dichotomous. In terms of scale, a 7 point Likert scale was used as in the original questionnaire. According to Chua (2011), the maximum number of items for online questionnaires should be 40 questions and the time to complete the questionnaire should be around 10-20 minutes. A decision was made to include also reverse type questions to check the consistency of the answers.

After the questionnaires were verified and approved by the supervisor, they were sent to an official translator to check the language usage and terms. The questionnaires were corrected based on that feedback.

Since the official language in Malaysia is the Malay language (Bahasa) and English is a second language, a translated questionnaire in Bahasa was also sent so that respondents could answer in the language they prefer. Another reason for the translation is because the official language in Malaysia and the UKM policy use the Malay language as a teaching medium in the university. To assure the translation was done correctly, McGorry (2000) suggests using at least two independent translators. For this questionnaire, one of the employed translators was a professional. My supervisor and friends also helped to check the translated version. Besides focusing on the usage of the correct words, the regional variation was also considered when developing the questionnaire, as highlighted by McGorry (2000). Considerations are variations of words, avoiding colloquialisms and using descriptive phrases. The details of the things that are tested, including stage, type of measurement and purpose are shown in the Table below, and more details about the questionnaire are in the appendix.
The questionnaire used in this study was adapted from few studies as in the Table 4.2.;

Author	Year	Question
Liñan and Chen	2009	Trait/abilities /skill -generic skill -attitude -subjective norm -PBC -Intention -Demographic -Reason to be entrepreneur
Soutaris et al.	2007	-University resource utilization -Trigger
Gurel et al.	2010	-Trait
Izquierdo and Deschoolmeester	2010	-Trait

Table 4.2. Questionnaire related to this study

Creation of the trait was based on a few studies. For example, Turo (2014) highlights seven personal characteristics important in entrepreneurship in the last 10 years: creativity, imagination, risk-taking propensity, recognition of opportunity, motivation, innovation and entrepreneurial self-efficacy.

Izquierdo and Deschoolmeester (2010) highlight a few competencies that should be developed among students based on their research on the entrepreneur and lecturer perspectives for undergraduate students. These competencies are decision-making, innovative thinking, identifying and solving problems, identifying business opportunities, evaluating business opportunities, communication, deal making and negotiation and networking. Risk-taking behaviours are common among entrepreneurs as mentioned by a few researchers (Brockhaus & Horwitz, 1986; Shaver & Scott, 1991; Lumpkin & Erdogan, 1999; Bonnett & Fuhrmann, 1991).

Additional questions were added that asked about the deep belief that triggered the students' interest in entrepreneurship, as pointed out by Krueger (2009). Some other questions that were asked were based on guidance from Block and Stumpf (1992) and Fayolle and Degeorge (2006). The guidance is explained in Table 4.3.:

Period	Criteria
Same times as courses	-Number of students enrolled -Number of courses -General awareness of and/ or interest in entrepreneurship
A short time after the courses end	-Intention to act -Acquisition of knowledge and know how -Development of entrepreneurial self-diagnosis abilities

Table 4.3. Questions related to time of data collection

4.2.1 Pre-course questionnaire measurement for students

A summary of the questions and purpose are presented in Table 4.4. The details of the questionnaire are in the appendix.

	Variable test	**Type of measurement**	**Measurement**	**Purpose**
1	Interest toward entrepreneurship in general before the course	7 likert scale	1 (Not at all) to 7 (To great extent)	To know the interest in entrepreneurship in general before starting the course
2	Entrepreneurial trait /abilities/ skill	7 likert scale	1 (No aptitude at all) to 7 (Very high aptitude)	To know the level of entrepreneurial trait /abilities/skill before the course
3	Generic skill	7 likert scale	1 (No at all) to 7 (Very high skill)	To know the level of generic skill before the course
4	Respondent	Dichotomous	Yes/No	To know if the

	relation with entrepreneur	scale		respondent knows any entrepreneur
5	Respondent relation with entrepreneur	7 likert scale	1 (To no extent) to 7 (Completely)	To know the level of entrepreneurial knowledge the respondent has about the entrepreneur that he/she knows
6	Measure Attitude	7 likert scale	1 (lowest) to 7 (Highest)	To measure attitude construct
7	Measure Attitude	7 likert scale	1(Not desirable at all) to 7 (Totally desirable)	To measure attitude construct
8	Measure entrepreneurial capacity	7 likert scale	1 (Totally ineffectively) to 7 (Fully effectively)	To measure variable perceived behavioral control
9	Measure of subjective norm	7 likert scale	1 (Totally disagree) to 7 (Totally agree)	To measure the variable subjective norm
10	Measure of subjective norm	7 likert scale	1 (Not important at all) to 7 (Very important)	To measure the variable subjective norm
11	Measure entrepreneurial intention	7 likert scale	1 (Lowest) to 7 (Highest)	To measure the entrepreneurial intention
12	Intention to pursue career within given choice	7 likert scale	1 (Not interested at all) to very interested	To measure attraction toward all type of career
13	Idea to start business	Dichotomous scale	Yes/No	To know whether the student think that they have a good idea to start a business
14	Barrier from starting the business	Category scale	As in list	To know the current barriers, prevent from involved in business
15	Reason to be	7 likert scale	1 (Lack of	To see the main

	entrepreneur if		better alternative employment) to 7 (Taking advantage of business opportunity)	reason to be entrepreneur
16	Age	Scale	Open	To know the demographic data
17	Gender	Category scale	Male /Female	To know the demographic data
18	Race	Category scale	As in list	To know the demographic data
19	State of birth	Category scale	As in list	To know the demographic data
20	Position in the family	Category scale	As in list	To know the demographic data
21	Field of study	Category scale	As in list	To know the demographic data
22	Work experience	Dichotomous scale	Yes/No	To know the demographic data
23	Business experience	Dichotomous scale	Yes/No	To know the demographic data
24	Level of education (father)	Category scale	As in list	To know the demographic data
25	Level of education (mother)	Category scale	As in list	To know the demographic data
26	Father occupation	Category scale	As in list	To know the demographic data
27	Mother occupation	Category scale	As in list	To know the demographic data

Table 4.4. Pre-course Questionnaire items

4.2.2 Post-course questionnaire measurement for student

Similarly, the items included in the post-course questionnaire are listed in Table 4.5.

	Variable test	Type of measurement	Measurement	Purpose
1	Interest toward entrepreneurship in general after the course	7 likert scale	1(Not at all) to 7 (To great extent)	To know the interest in entrepreneurship in general after finished the course
2	Structure of the class	Category scale	As in list	To see the structure of class
3	Does the class follow syllabuses	Dichotomous scale	Yes/No	To know whether the trainer follow syllabuses
4	Entrepreneurial trait /abilities/ skill	7 likert scale	1 (No aptitude at all) to 7 (Very high aptitude)	To know the level of entrepreneurial trait /abilities/skill before the course
5	Generic skill	7 likert scale	1 (No at all) to 7 (Very high skill)	To know the level of generic skill before the course
6	Effect from the course	7 likert scale	1 (To no extent) to 7 (To great extent)	To measure the effect of the course toward several aspects
7	Respondent relation with entrepreneur	Dichotomous scale	Yes/No	To know if the respondent knows any entrepreneur
8	Respondent relation with entrepreneur	7 likert scale	1 (Lowest) to 7 (Highest)	To know the level of entrepreneurial knowledge the respondent has about the entrepreneur that he/she knows
9	Measure Attitude	7 likert scale	1 (lowest) to 7 (Highest)	To measure attitude construct
10	Measure Attitude	7 likert scale	1(Not desirable at all) to 7 (Totally desirable)	To measure attitude construct
11	Measure entrepreneurial capacity	7 likert scale	1 (Totally ineffective) to 7 (Fully	To measure variable perceived

			effective)	behavioral control
12	Measure of subjective norm	7 likert scale	1 (Totally disagree) to 7 (Totally agree)	To measure the variable subjective norm
13	Social valuation	7 likert scale	1(Not important at all) to 7 (Very important)	To measure the variable subjective norm
14	Measure entrepreneurial intention	7 likert scale	1(Lowest) to 7 (Highest)	To measure the entrepreneurial intention
15	Effect from the course	7 likert scale	1(To no extent) to 7 (To great extent)	To measure the effect of the course toward several aspects
16	Trigger	Dichotomous scale	Yes/No	To know whether any event or trigger toward consider becoming entrepreneur
17	Trigger	Open question		To know the event or trigger
18	Effect of event during the course on considering entrepreneurial career	7 likert scale	1 (Not at all) to 7 (To a large extent)	To know the effect of certain event and person during the course on the student mindset to consider the entrepreneurial career
19	Level of involvement in activities toward entrepreneurship	7 likert scale	1 (Minimal utilization) to 7 (Extensive utilization)	To know the level of involvement in activities related to entrepreneurship
20	Intention to pursue career within given choice	7 likert scale	1 (Not interested at all) to very interested	To measure attraction toward all type of career
21	Idea to start business	Dichotomous scale	Yes/No	To know whether the student think that they have a good idea to start a business

22	Barrier from starting the business	Category scale	As in list	To know the current barrier that prevent from involved in business
23	Course relation with opportunity to start business	Dichotomous scale	Yes/No	To know whether the course provide opportunity to involve in business
24	Why student answer No for previous question	Category scale	As in list	To know the reason why answer NO for question no 23
25	Reason to be entrepreneur if	7 likert scale	1(Lack of better alternative employment) to 7 (Taking advantage of business opportunity)	To see the main reason to be entrepreneur
26	Level of satisfaction toward the course effect	7 likert scale	1 (Not at all) to 7 (To great extent)	To know the level of satisfaction related to the effect of the course to the student
27	Intention to proceed to higher course	Dichotomous scale	Yes /No	To know whether the students interested to pursue for higher level course
28	Reason for question 27	open	Open	To know the reason why answer YES /NO in 27
29	Age	Scale	Open	To know the demographic data
30	Gender	Category scale	Male /Female	To know the demographic data
31	Race	Category scale	As in list	To know the demographic data
32	State of birth	Category scale	As in list	To know the demographic data
33	Position in the family	Category scale	As in list	To know the demographic data

34	Field of study	Category scale	As in list	To know the demographic data
35	Work experience	Dichotomous scale	Yes/No	To know the demographic data
36	Business experience	Dichotomous scale	Yes/No	To know the demographic data
37	Level of education (father)	Category scale	As in list	To know the demographic data
38	Level of education (mother)	Category scale	As in list	To know the demographic data
39	Father occupation	Category scale	As in list	To know the demographic data
40	Mother occupation	Category scale	As in list	To know the demographic data

Table 4.5. Post-course Questionnaire items

Tables 4.4 and 4.5 show the types of questions for the pre- and post-course. The pre-course questionnaire is composed of 27 questions and the post-course questionnaire is composed of 40 questions. The items that measure the TPB are shown in the Table below. The reversed question is number 11c on the pre-course questionnaire and number 14c for the post-course questionnaire. The questionnaires are the same for the TPB-related questions. There are additional questions in the post-course questionnaire to measure the effect, satisfaction, trigger event etc. that suits the objective of this study.

Based on the questions asked and the data analysis there were some questions that were not shown in this study because they are beyond the scope. Those questions will be answered in a future journal publication. There are 58 questions that measure the four TPB constructs, shown in Table 4.6:

	Construct	**Question**
Pre-course	Attitudes (IV)	6a,6b,6c,6d,6e,6f,

		7a,7b,7c,7d,7e,7f
	Subjective norms (IV)	9a,9b,9c,10a,10b,10c
	PBC (IV)	8a,8b,8c,8d,8e,8f
	Intention (DV)	11a,11b,11c,11d,11e
Post course	Attitudes (IV)	9a,9b,9c,9d,9e, 10a,10b,10c,10d,10e,10f
	Subjective norms (IV)	12a,12b,12c,13a,13b,13c
	PBC (IV)	11a,11b,11c,11d,11e,11f
	Intention (DV)	14a,14b,14c,14d,14e

Table 4.6. Questions that measure four constructs of intention model

Fayolle and Gailly (2015) reported four levels of evaluation, which include satisfaction, learning, behaviour and results. Based on the combination of pre- and post-course questions, all the aspects above have been covered. Unfortunately, due to limited time and scope of the study, the content did not go too in-depth, and some of the results will not be reported in detail.

4.3 SAMPLING PROCEDURES

The study used a convenience sampling method, which is a non-probability sampling. This method of sampling was chosen because the study was financed by the university where the study was conducted.

The other benefit of this method is the information of the sampling list is easier to obtain compared to surveys from an unknown population. The drawback of this sampling method is the results cannot be generalised even though it is done on a large sample because the study course syllabus is developed specifically for this university. The target respondents for this

survey are the students of the target course, which fits the suggestion by Calder et al. (1981). The survey invitation was sent by email to the students' university email address based on a current list of active students. Based on this method, the target respondents can be assured the students are from the target course.

4.4 Pre-test

The pre-test is the survey process done before the actual data collection. The purpose of a pre-test, as mentioned by Grimm (2010), is to make sure questions can be answered by the respondents and they measure what is supposed to measure precisely.

Since the study is based on an adapted questionnaire that was robustly tested many times in different areas and regions a pilot test is not required. The pre-test was conducted to check the layout, length and quality of questions, to eliminate ambiguity, hesitation to answer and to ensure clarity of the questionnaire items. Prior to the pre-test, the questionnaire was given to a close friend to see if there are any ambiguities that the researcher did not realise. To achieve the objective, the pre-test was done using a target group and informal testing as suggested by Nanda et al. (2013).

The checklist for the pre-test followed suggestions by Grimm (2000) is presented in Table 4.7:

1. Did the respondents clearly understand what was being asked and the terminology being used?

2. Was there any major option missing in any of the questions? If several respondents write new option(s) to a question, options are obviously not exhaustive.

3. Was the respondent willing to answer each question? Were any questions offensive, sensitive, or too difficult?

4. Did the respondent understand the instructions for responding to each question? For example, instructions may not be clear regarding choice of only one option or multiple options to a question.

5. Did the respondent feel that the researcher wanted him or her to answer in some specific way (i.e., did the respondent feel some of the questions were biased)?

6. Did the respondents understand any instructions regarding skipping questions depending upon the answer to previous questions?

7. Did the flow and language of the questionnaire seem logical and natural?

8. Did the time taken to answer the questionnaire seem reasonable?

9. If the survey was administered by an inter- viewer, did the respondent feel that the interviewer, either verbally or nonverbally, tried to bias his or her response?

Table 4.7. Check-list for Questionnaire evaluation

Source: Grimm (2000) in Wiley International Encyclopedia of Marketing, edited by Jagdish N. Sheth and Naresh K. Malhotra.

In the pre-test, according to an earlier study by Ferber and Verdoorn (1962), the minimum number of the target population should be 12. However, Han et al. (1982) suggested no specific number provided it was a test with the target respondents. Then it was distributed to the target population, as suggested by Han et al. (1982). After receiving the feedback from the pre-test, the questionnaire was changed based on the feedback. After making necessary changes and confirming that the questionnaire does not have any problems, the researcher prepared the survey to go online.

The pre-test was conducted at UKM. It was given to 15 random students not enrolled in the entrepreneurship course, and their feedback on the clarity of the questionnaire was collected. The issues that were assessed during the pre-test were related to the clarity of instructions, clarity of statements, keywords in the questions, questionnaire layout and length and other problems with the research instrument. The second time, the pre-test questionnaire was distributed to students in the higher-level entrepreneurship course.

The results from the pilot study were used to improve the questionnaires and minimise any weaknesses. This ensures that the questionnaire is adequate, valid and reliable enough to be used. One example of the feedback included the usage of language. Originally, during the pilot study, only questionnaires in English were distributed to the students. According to the feedback, some students are more comfortable with the Malay language, so the questionnaire was also written in the Malay language for actual implementation.

4.5 Implementation of survey

The survey was conducted online for several reasons. There were a high number of respondents, and there was an issue of demographics where the researcher could conduct the study as the location of the university is in a different region, and it is low cost.

Originally the researcher planned to distribute the questionnaire by paper before the class started. However, because the registered number of students is more than 3000, it is not possible for the research to be conducted face-to-face. Another reason was economic; the research is conducted in different region than the researcher's university.

As mentioned, the sample size issue was not considered for this study because the survey was voluntary. In order to increase participation, the survey was sent to all the students

enrolled in the course. In total, 3192 questionnaire invitations were sent by an online survey. The information of all students was received from the CESMED. The respondents were asked to give their honest answers to all the questions.

The first round of data collection was done for the pre-course, and the second round of data collection was done for the post-course. Additional information was also gathered from the director, vice director and the lecturers who teach the course. The researcher also attended some of the training to see the content of the course.

To ensure ethical issues are avoided concerning the data collection, certain action is taken by the researcher to avoid ethical issues. Some of the cautions include:

1) Seeking permission

As mentioned previously, the researcher asked permission from the director of CESMED and the course coordinator prior to data collection. The research was based on voluntary participation, and that information was included in the invitation email. The purpose of the study, the direct or indirect effect towards participants and how data will be used was also included in the invitation email.

2) Minimum incentive only for selected person

To avoid ethical problems with incentives, the survey only offered incentives to five people for each set of questions for the students. The incentives were given randomly. The percentage of incentives is very low; it only accounts for 0.2% of the total student population.

3) Data management for sensitive information

Since the questionnaires may have sensitive information that could be intrusive to certain people, the students are given the option to complete the survey or drop the survey if they feel the questions asked are sensitive to them. The respondents were informed of the purpose of the study and how the data will be used and treated as 'CONFIDENTIAL' for personal data.

4) Assurance of confidentiality

To avoid any bias in answers and responses by the students, the respondents were informed that the answers will not bring any harm to them such as affecting their grade for the course. The personal data will be treated as confidential and were not given to CESMED, UKM. The report will only be used to provide general information.

4.6 Data analysis tool and guideline

For this survey, the researcher used the combination of the statistical package for social science (SPSS, v. 23) and Smart PLS. The SPSS helps the researcher do descriptive data analysis. The raw data collected from the questionnaires was first transferred to Excel and then change the code to suit the system requirement by SPSS. The analysis will use SEM since, according to Lorz et al. (2013), the usage of SEM is still low in this field. Using the Smart PLS can support a small sample size and is better than Amos software in term of categorical moderator data analysis. According to Hoyle (1995), the path analysis is sufficient with 100 and 200 participants, which this study already meets. A study by Richter, Sinkovics, Ringle and Schlägel (2016) showed that up to now, only 45 studies exist using PLS-SEM for international business research. This research will add value to this latest methodology to evaluate entrepreneurship education.

There are various methods and approaches to SEM. For this study, the analysis will be done using SMART PLS version 3.0. The reason for using PLS–SEM is that it has a limited number of respondents (Wong, 2013), which fits this study since the post-course data only had 149 respondents, which is small compared to the number of pre-course respondents.

The guidelines for the SEM sample size are varied. For example, Wong (2013) point out that if the number of arrows pointing at the latent variable is 3 or more, the minimum sample size is 59 respondents. Hoyle (1995) suggests that the number of respondents should be between 100 and 200 to do path modelling. The benefit of PLS-SEM as pointed out by Hair et al. (2011, p. 139) is it is a 'silver bullet or panacea for dealing with empirical research challenges such as smaller sample sizes.'

4.6.1 Basic Model for this study in a SEM Diagram

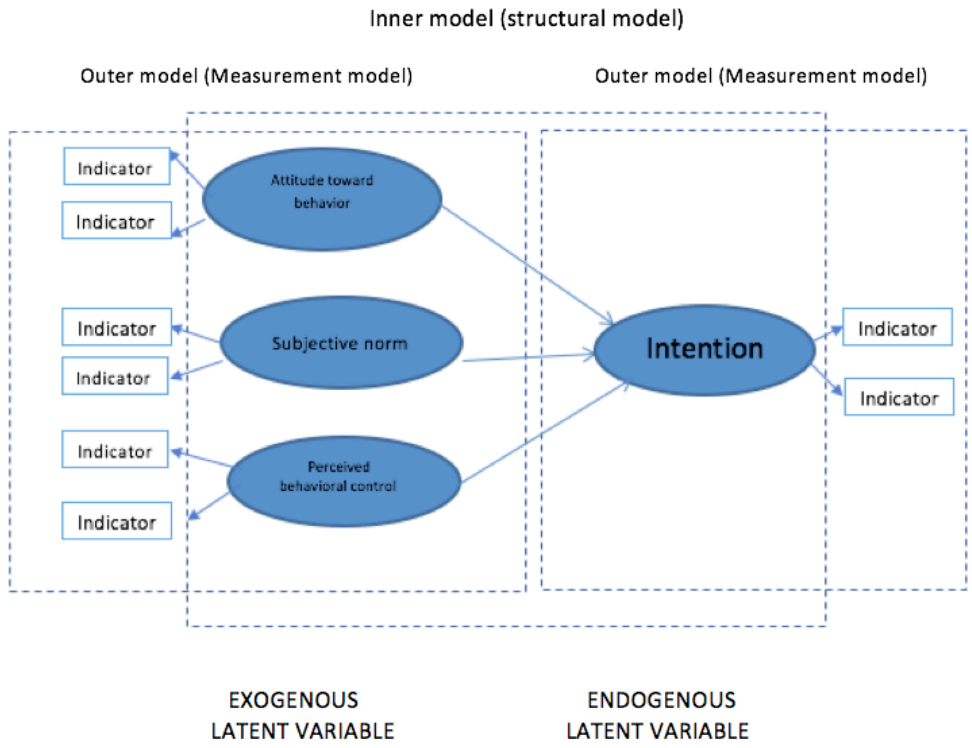


Figure 4.5. SEM Diagram

In theory, the application of PLS-SEM is similar to multiple regression analysis. As mentioned by Hair et al. (2011), the data can be less constrained and smaller for analysis with PLS-SEM.

In terms of the model, the PLS-SEM uses two components, the inner (structural model) and outer (measurement model). The structural model consists of the relationships between exogenous and endogenous variables. The exogenous variable is equal to an independent variable from which the arrow points outward. The endogenous variable is equal to a dependent variable where the variable received at least one arrow pointing toward it. The model only permits a one-way relationship.

There are two types of latent constructs possible in the measurement models. They are reflective and formative. In a reflective construct, the indicators co-vary with the latent construct and are a reflection of it. In the formative construct, in turn, the indicators are components making up or forming the latent construct, and they do not need to co-vary with each other. When the headed arrow point toward indicator is a reflective model. In PLS-SEM, the relationship between these variables is called outer loading. Formative model is the condition where the arrow come from indicator toward latent variable. The outer weight is the relationship to the formative.

PLS-SEM is a variance-based method to estimate simultaneous equations models, while other approaches are covariance-based methods (AMOS, LISREL, etc). Hair et al. (2011) provide a guide to choose between the CB SEM and PLS-SEM. The details for the guide are as shown in Table 4.8:

Rules of Thumb for Selecting CB-SEM or PLS-SEM

Research Goals
- If the goal is predicting key target constructs or identifying key "driver" constructs, select PLS-SEM.
- If the goal is theory testing, theory confirmation, or comparison of alternative theories, select CB-SEM.
- If the research is exploratory or an extension of an existing structural theory, select PLS-SEM.

Measurement Model Specification
- If formative constructs are part of the structural model, select PLS-SEM.
  Note that formative measures can also be used with CB-SEM but to do so requires accounting for relatively complex and limiting specification rules.
- If error terms require additional specification, such as covariation, select CB-SEM.

Structural Model
- If the structural model is complex (many constructs and many indicators), select PLS-SEM.
- If the model is nonrecursive, select CB-SEM.

Data Characteristics and Algorithm
- If your data meet the CB-SEM assumptions exactly, for example, with respect to the minimum sample size and the distributional assumptions, select CB-SEM; otherwise, PLS-SEM is a good approximation of CB-SEM results.
- *Sample size considerations:*
  - If the sample size is relatively low, select PLS-SEM. With large data sets, CB-SEM and PLS-SEM results are similar, provided that a large number of indicator variables are used to measure the latent constructs (consistency at large).
  - PLS-SEM minimum sample size should be equal to the larger of the following: (1) ten times the largest number of formative indicators used to measure one construct or (2) ten times the largest number of structural paths directed at a particular latent construct in the structural model.
- If the data are to some extent nonnormal, use PLS-SEM; otherwise, under normal data conditions, CB-SEM and PLS-SEM results are highly similar, with CB-SEM providing slightly more precise model estimates.
- If CB-SEM requirements cannot be met (e.g., model specification, identification, nonconvergence, data distributional assumptions), use PLS-SEM as a good approximation of CB-SEM results.
- CB-SEM and PLS-SEM results should be similar. If not, check the model specification to ensure that CB-SEM was appropriately applied. If not, PLS-SEM results are a good approximation of CB-SEM results.

Model Evaluation
- If you need to use latent variable scores in subsequent analyses, PLS-SEM is the best approach.
- If your research requires a global goodness-of-fit criterion, then CB-SEM is the preferred approach.
- If you need to test for measurement model invariance, use CB-SEM.

Table 4.8. Rules of thumb for selecting CB-SEM or PLS-SEM

Source: Hair et al. (2011, p. 144)

Besides providing the guide to choose a suitable method, Hair et al. (2011) also provided the guide to analyse the data. The details are shown in Table 4.9:

Rules of Thumb for Model Evaluation

Reflective Measurement Models

- Internal consistency reliability: Composite reliability should be higher than 0.70 (in exploratory research, 0.60 to 0.70 is considered acceptable).
- Indicator reliability: Indicator loadings should be higher than 0.70.
- Convergent validity: The average variance extracted (AVE) should be higher than 0.50.
- Discriminant validity:
  - The AVE of each latent construct should higher than the construct's highest squared correlation with any other latent construct (Fornell–Larcker criterion).
  - An indicator's loadings should be higher than all of its cross loadings.

Formative Measurement Models

- Examine each indicator's weight (relative importance) and loading (absolute importance) and use bootstrapping to assess their significance. The minimum number of bootstrap samples is 5,000, and the number of cases should be equal to the number of observations in the original sample. Critical *t*-values for a two-tailed test are 1.65 (significance level = 10 percent), 1.96 (significance level = 5 percent), and 2.58 (significance level = 1 percent).
  - When all the indicator weights are significant, there is empirical support to keep all the indicators.
  - If both the weight and loading are nonsignificant, there is no empirical support to retain the indicator and its theoretical relevance should be questioned.
- Multicollinearity: Each indicator's variance inflation factor (VIF) value should be less than 5.
- Indicator weights should be examined to determine if they are affected by (observed or unobserved) heterogeneity, which results in significantly different group-specific coefficients. If theory supports the existence of alternative groups of data, carry out PLS-SEM multigroup or moderator analyses. If no theory or information is available about the underlying groups of data, an assessment of unobserved heterogeneity's existence must be conducted by means of the finite mixture PLS (FIMIX-PLS) method.
- When many indicators are used to measure a formative construct, with some being nonsignificant, establish two or more distinct constructs, provided there is theoretical support for this step.

Structural Model

- R^2 values of 0.75, 0.50, or 0.25 for endogenous latent variables in the structural model can be described as substantial, moderate, or weak, respectively.
- Use bootstrapping to assess the path coefficients' significance. The minimum number of bootstrap samples is 5,000, and the number of cases should be equal to the number of observations in the original sample. Critical *t*-values for a two-tailed test are 1.65 (significance level = 10 percent), 1.96 (significance level = 5 percent), and 2.58 (significance level = 1 percent).
- Predictive relevance: Use blindfolding to obtain cross-validated redundancy measures for each construct. Make sure the number of valid observations is not a multiple integer number of the omission distance *d*. Choose values of *d* between 5 and 10.
  Resulting Q^2 values of larger than zero indicate that the exogenous constructs have predictive relevance for the endogenous construct under consideration.
- Heterogeneity: If theory supports the existence of alternative groups of data, carry out PLS-SEM multigroup or moderator analyses. If no theory or information about the underlying groups of data is available, an assessment of unobserved heterogeneity's existence must be conducted by means of the FIMIX-PLS method, which is available in the SmartPLS software package.

Table 4.9. Rules of thumb for model evaluation

Source: Hair et al. (2011, pg 145)

PLS-SEM requires a two-step separate process to evaluate the structural and measurement models. The first step is to evaluate the measurement model. The second step will be to evaluate the structural model.

For the PLS-SEM, the composite reliability will replace the traditional function of Cronbach's Alpha. Based on Hair et al. (2011), if the loading of the indicator is lower than 0.4, it should always be deleted. However, if the values are from 0.4 to 0.7, then deleting the indicator should only be considered if the process does not affect validity.

The assessment for the reflective measurement model concentrates on convergent validity and discriminant validity, as indicated in Table 4.10.

Evaluation of reflective measurement model	Convergent validity	AVE value	>0.5
	Discriminant validity	Fornell–Larcker Criterion & Cross loading	1)The AVE of each latent construct > highest squared correlation with other latent construct 2)Indicator loading with it associated latent construct > loadings with all the remaining construct

Table 4.10. Assessment of reflective constructs

For the formative model, the evaluation is different where the indicator value is important. The indicator loading and weight should be significant if it supports the content to the formative index.

For the structural model, the evaluation is based on R2 and significance of path coefficient. But there is no right value for high R2 since it is different according to the field. For example, according to Hair et al. (2011), in the consumer behaviour field the value 0.2 is already considered high. The support for the hypothesis is based on the significance of the paths. If the results show non-significant meaning, the hypothesis is not supported.

Besides the statistical measurement above, the effect sizes of the model will also be reported. The traditional usage of the p-value itself is not enough (Sullivan & Feinn, 2012). The importance of the effect size is to measure of the 'magnitude of the difference between groups' (Sullivan & Feinn, 2012). In this study, the effect size will be the effect of the intervention. Since the Smart PLS cannot do it, the effect size must be calculated manually using the formula as in the next page:

The effect size:

f^2 = (R^2 Model with moderator- R^2 model without moderator) / (1-Model with moderator)

If the researcher wants to see the model's capability for prediction, then he or she should proceed to Stone Geisser's Q2 (Hair et al., 2011). The blindfolding only applied to the reflective measurement model.

CHAPTER 5: DATA ANALYSIS RESULTS

This chapter will cover the results and outcomes of the research. The results are based on two types of software: SPSS version 23 and Smart PLS 3.0. The reason for using two types of software is to help analyse the data investigated in this study. The usage of Smart PLS takes into consideration the suggestion by Lorz et al. (2013) about the usage of SEM due to deeper analysis of relationships, and limited usage in this field.

After the data were collected, the next process was to code the data into SPSS. After that, several processes were done to the data before the analysis. The data analysis in this chapter is divided into two types, descriptive and inferential. The descriptive statistic is used to change the raw data to information that can explain the phenomenon (Sekaran, 2003). Inferential, on the other hand, is used to see the relations between variables, differences, etc. (Sekaran, 2003).

5.1 Descriptive statistics of research outcome

The respondents for the questionnaire are students who took the one-semester compulsory entrepreneurship course (Basic Entrepreneurship and Innovation) at UKM. The data collection was divided into two stages, pre- and post-course, as done in Fayolle and Gailly (2005) and Fayolle et al. (2006). The number of respondents for the pre-course is 493 students, which is 15.4% of the study population. Meanwhile, for the post-course, the respondents comprised 4.7%, which accounted for 149 students. The reason for the low participation in the post-course may be that the collection was done after the course, which is also the period when the students have examinations for all the subjects that they enrolled in and the students were also requested by CESMED to answer the post-course questionnaire prepared by CESMED. The low response rate did not affect much of the data since no specific acceptable response rate was highlighted in previous studies (Nolte et al., 2014;

Mellahi & Harris, 2015) and the sample size met the requirement to be analysed using Smart PLS. A summary of the respondents' demographics are presented here.

5.1.1 Age

Based on the data, the age of the respondents varied from 18 to 29 years. The average age for the respondents is 20.38 years for the pre-course and 20.59 years for the post-course.

5.1.2 Faculty of study

Figure 5.1 Respondents base on faculty

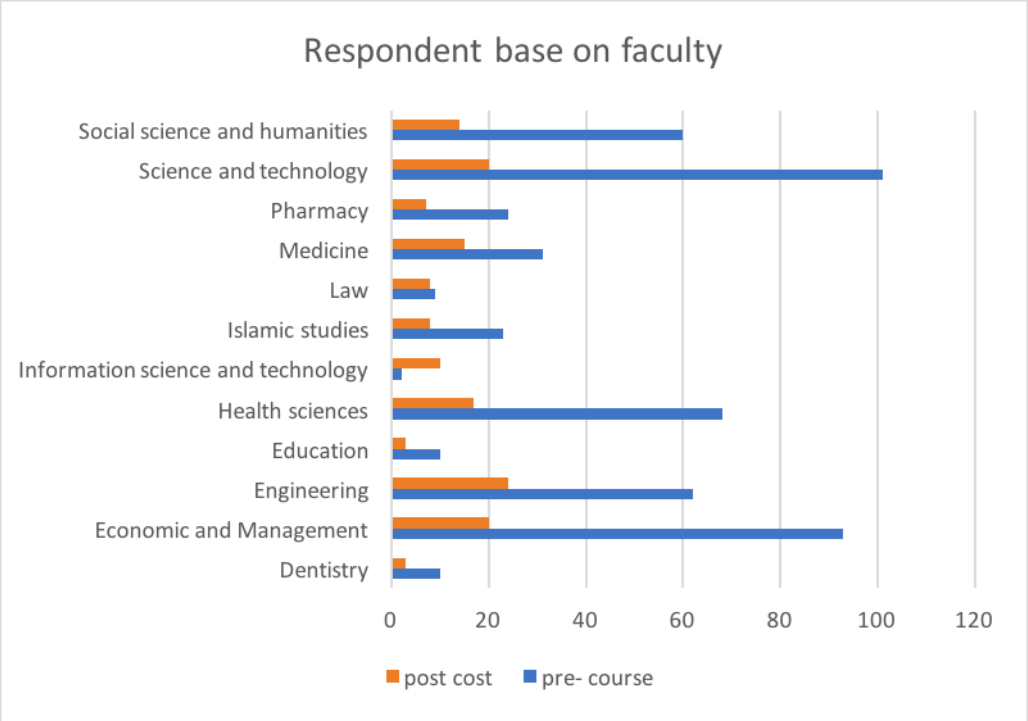


Table 5.1. Total number of respondents for the research base on faculty for pre-course and post course

Faculty	Total pre- course respondent	Total post cost respondent	Total number of students
Dentistry	10	3	54
Economic and Management	93	20	530

Engineering	62	24	318
Education	10	3	135
Health sciences	68	17	267
Information science and technology	2	10	194
Islamic studies	23	8	264
Law	9	8	99
Medicine	31	15	211
Pharmacy	24	7	87
Science and technology	101	20	593
Social science and humanities	60	14	440
Total	493	149	3192

The results in Table 5.1 show that the majority of the pre-course respondents came from the Faculty of Science and Technology. Meanwhile, the post-course respondent majority is from the Faculty of Engineering.

5.1.3 Respondents based on state of birth

Figure 5.2. Respondent state of birth

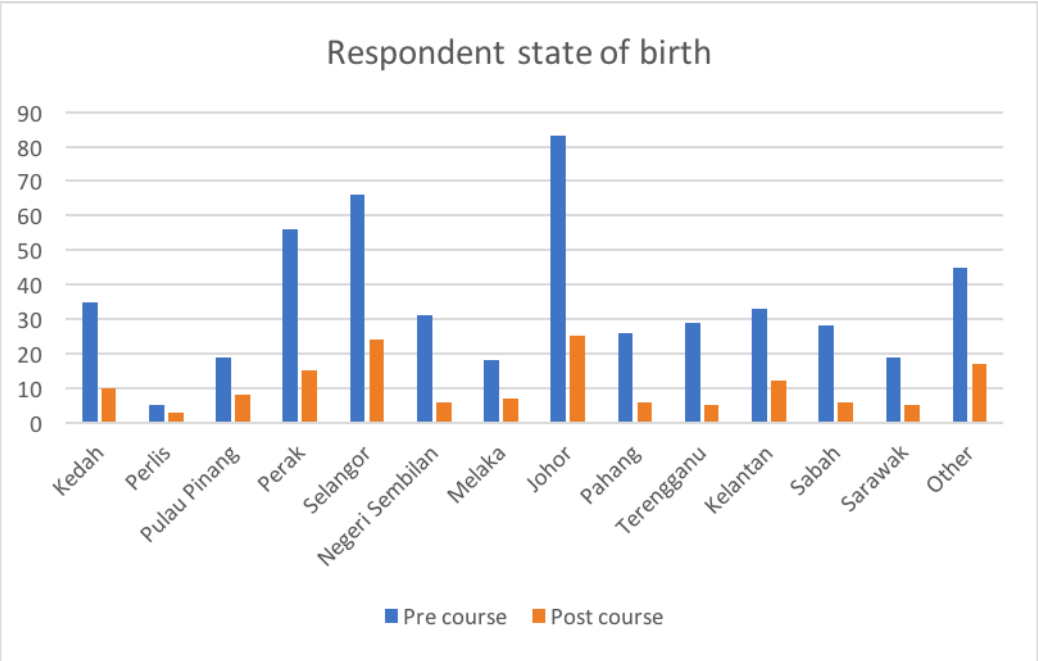


Table 5.2. Total number of respondents base on state of birth in Malaysia

	Frequency	**Percentage**	**Frequency**	**Percentage**
Kedah	35	7.1	10	6.7
Perlis	5	1	3	2.0
Pulau Pinang	19	3.9	8	5.4
Perak	56	11.4	15	10.1
Selangor	66	13.4	24	16.1
Negeri Sembilan	31	6.3	6	4.0
Melaka	18	3.7	7	4.7
Johor	83	16.8	25	16.8
Pahang	26	5.3	6	4.0
Terengganu	29	5.9	5	3.4
Kelantan	33	6.7	12	8.1
Sabah	28	5.7	6	4.0
Sarawak	19	3.9	5	3.4
Other	45	9.1	17	11.4
Total	**493**	**100**	**149**	**100**

In terms of states, Table 5.2 showed that the majority of the respondents, which accounted for more than 16%, came from the State of Johor for the pre-course and post-course questionnaire.

5.1.4 Ethnicity

Figure 5.3 Respondent base on ethnic

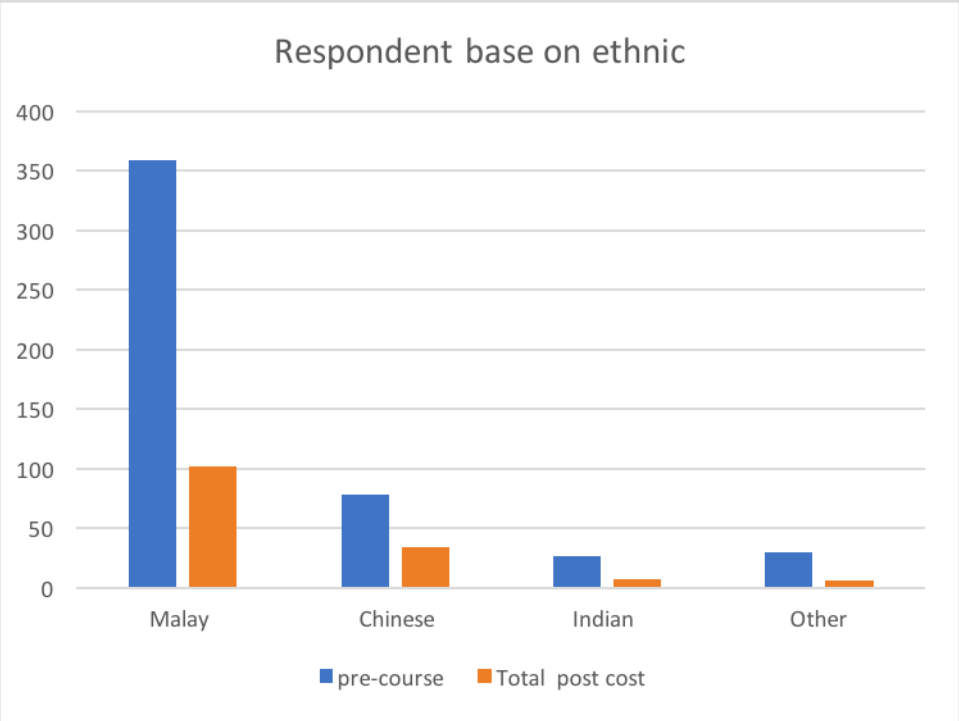


Table 5.3. Total number of respondents' base on ethnic

Category	Variable	Total pre-course respondent	Percentage	Total post cost respondent	Percentage
Ethnic	Malay	359	72.8	102	68.5
	Chinese	78	15.8	34	22.8
	Indian	26	5.3	7	4.7
	Other	30	6.1	6	4.0

Based on the results from different ethnic categories in Table 5.3, the dominant group is the Malays, which covers 72.8% of the results for the pre-course and 69% for the post-course. The response rate in general reflects the population of Malaysia.

5.1.5 Gender

Figure 5.4. Respondent base on gender

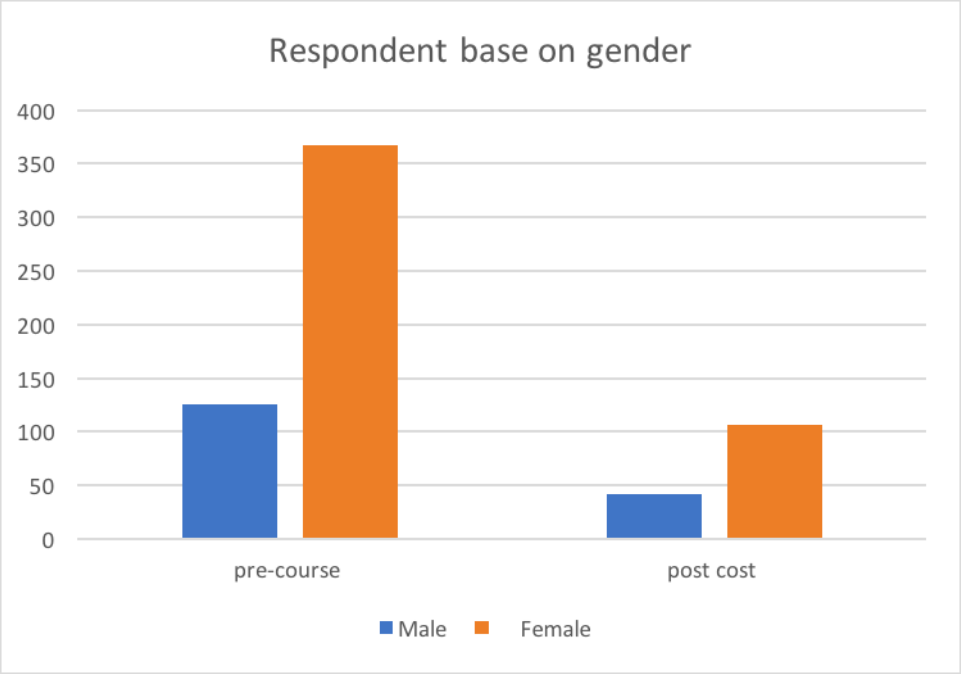


Table 5.4. Total number of respondents base on gender

Category	Variable	Total pre-course respondent	Percentage	Total post cost respondent	Percentage
Gender	**Male**	126	25.6	42	28.2
	Female	367	74.4	107	71.8
	Total	493	100	149	100

In terms of gender, the female students comprised 74.4% of respondents for the pre- course and 70.5% for the post-course (Table 5.4). This scenario in general also reflects the gender population at UKM.

5.1.6 Working experience

The results from Table 5.5 for the pre-course showed that 65.5% of the respondents have working experience and 52.8% have experience with business, as shown in Table 5.6. For the post-course data, the number of people who have work experience (Table 5.5) accounted for 57.7% and more than 50% have experience in business (Table 5.6).

Figure 5.5. Students' working experience

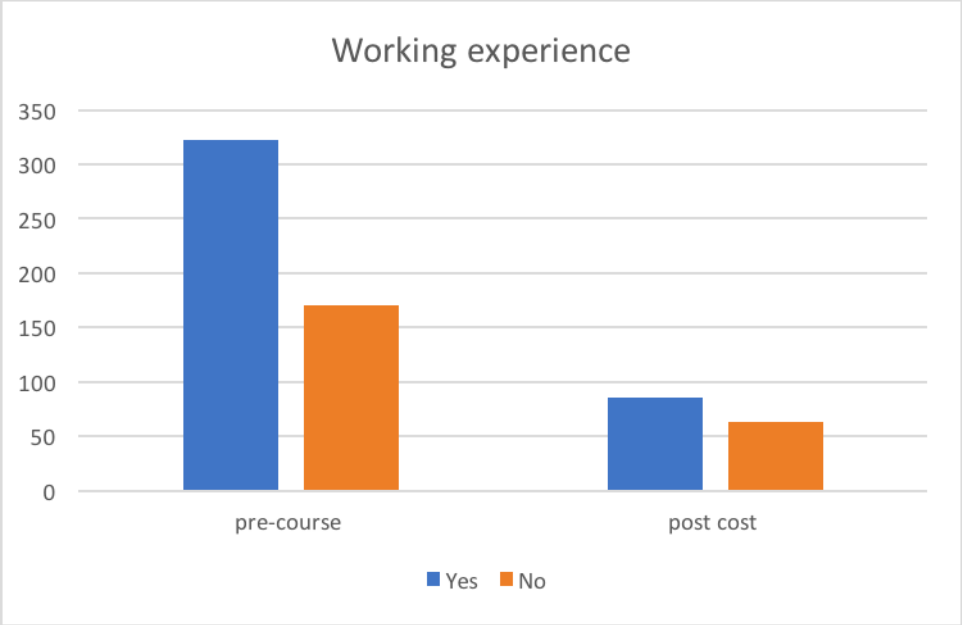


Table 5.5. Total number of students base on working experience

Category	Variable	Total pre-course respondent	Percentage	Total post cost respondent	Percentage
Working experience	**Yes**	323	65.5	86	57.7
	No	170	34.5	63	42.3
	Total	493	100	149	100

5.1.7 Business experience

Figure 5.6. Students' business experience

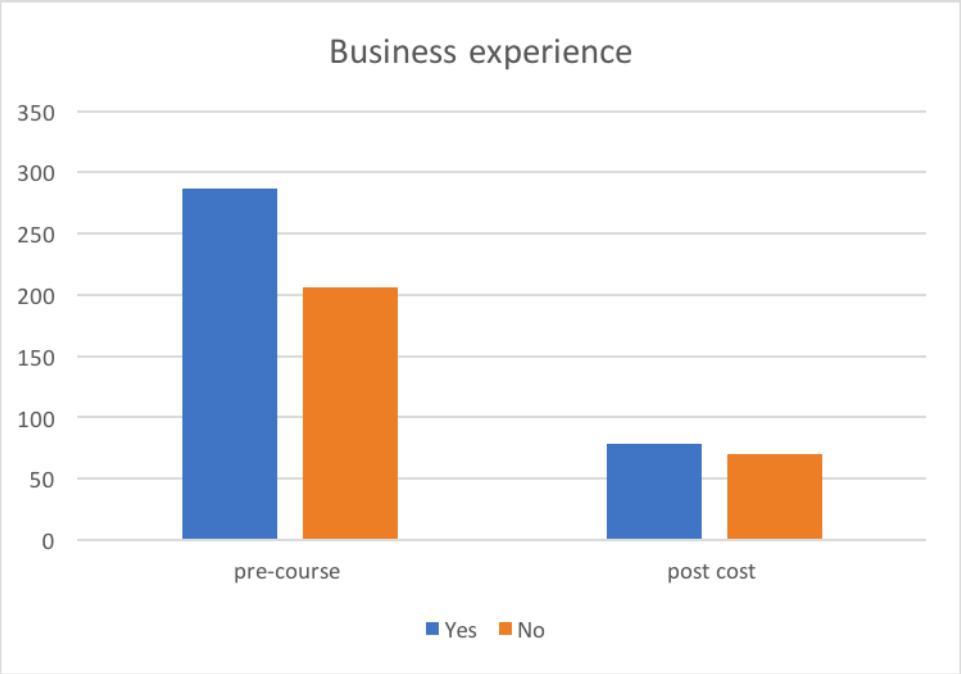


Table 5.6. Total number of students base on business experience

Category	Variable	Total pre-course respondent	Percentage	Total post cost respondent	Percentage
Business experience	**Yes**	287	52.8	79	53.0
	No	206	41.8	70	47.0
	Total	493	94.6	149	100

5.1.8 Position in the family

The result of the study as in Figure 5.7 and Table 5.7 showed that majority of respondents in the pre-course and post course are the middle child in their family.

Figure 5.7. Position in family

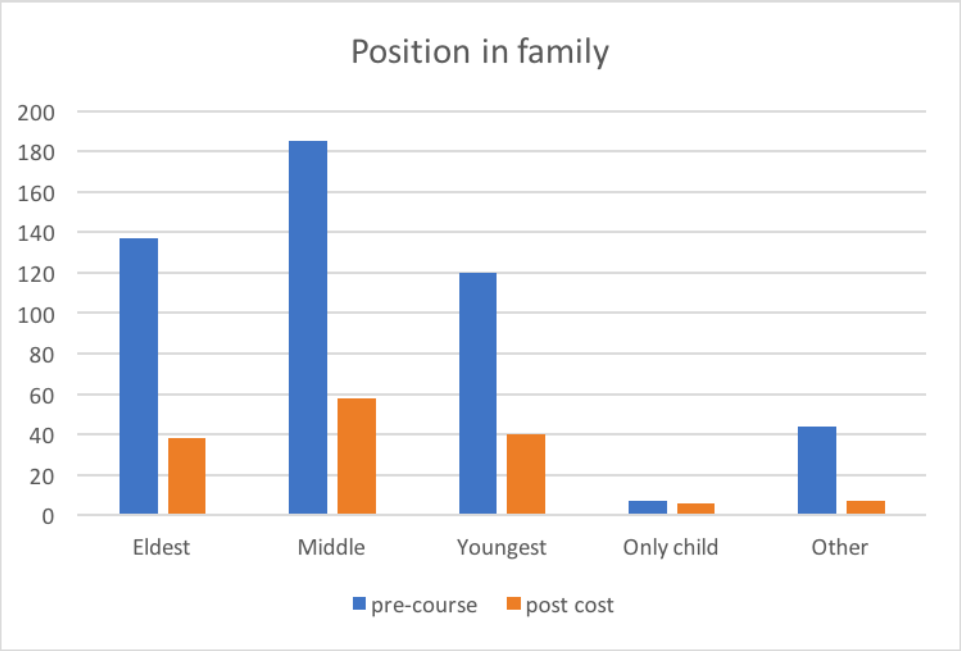


Table 5.7. Total number of students base on position in family

Category	Variable	Total pre-course respondent	Percentage	Total post cost respondent	Percentage
Position in family	**Eldest**	137	27.8	38	25.5
	Middle	185	37.5	58	38.9
	Youngest	120	24.3	40	26.8
	Only child	7	1.4	6	4.0
	Other	44	8.9	7	4.7
	Total	493	99.9	149	100

5.1.9 Parent involvement in business

Table 5.8 shows the family background for the pre-course data, and 23.3% of fathers were involved in business and 5.3% of mothers were involved in business. Meanwhile, the post-

course data showed 18.8% of fathers were involved in business and 8.7% of mothers were involved in business.

Figure 5.8. Involvement of parent in business

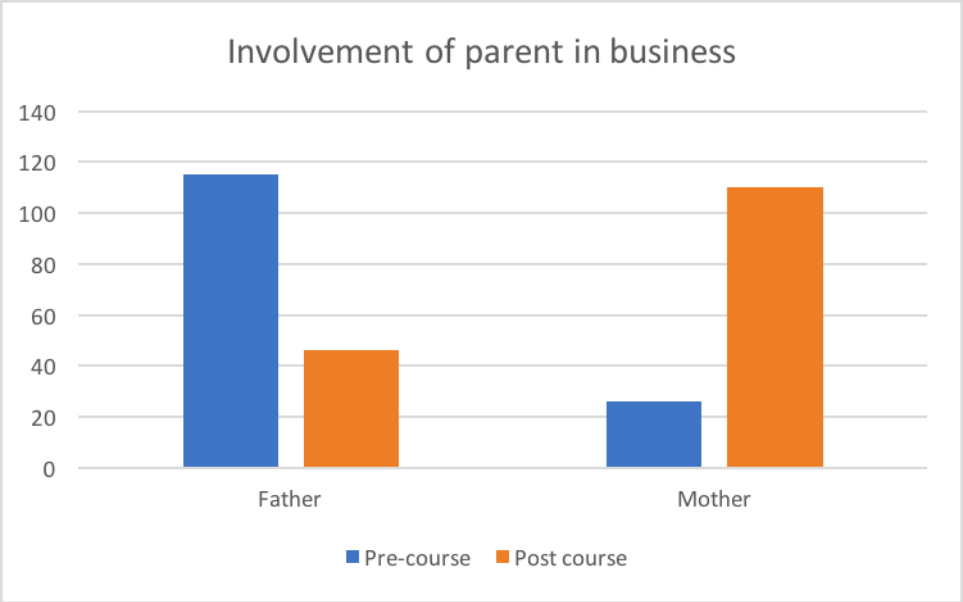


Table 5.8. Number of father and/or mother involved in business

Category	Variable	Total pre course respondent	Percentage	Total post cost respondent	Percentage
Father/mother involved in business	**Father**	115	23.3	28	18.8
	Mother	26	5.3	13	8.7

5.2 Sample size and statistical power

This study uses the Smart PLS software to estimate our theoretical model. The report of the result for this study base on guidance by Wong (2013). The results showed that there were 493 pre-study respondents and 149 post-study respondents. Based on a study by Cohen and

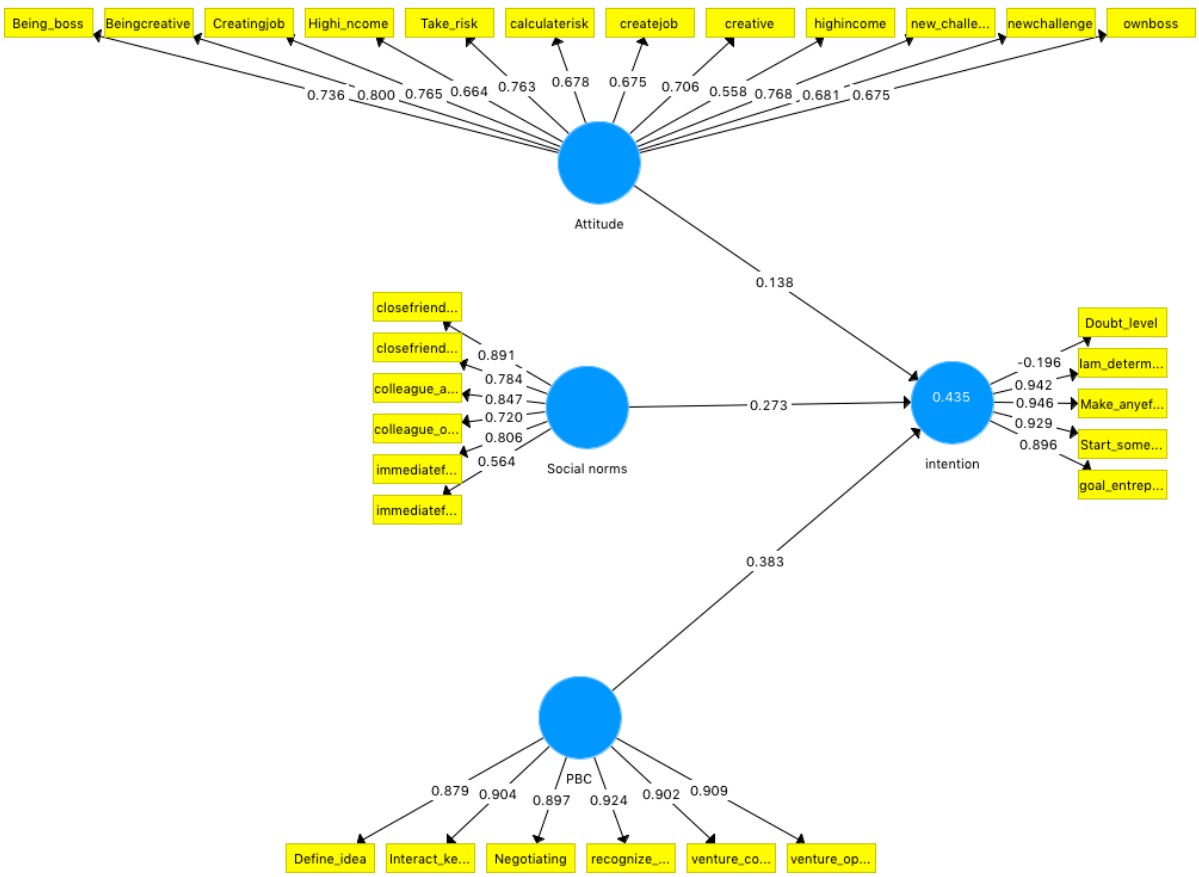
Cohen (1983), the sample size for a study that has three independent variables should be between 60-100 people. The total number of respondents for this study have fulfilled that criteria. One of the reasons why this analysis uses Smart PLS software is because it can do the analysis even with a small sample size.

5.2.1 Assessing the quality of the pre-course data

5.2.1.1 Measurement outer model

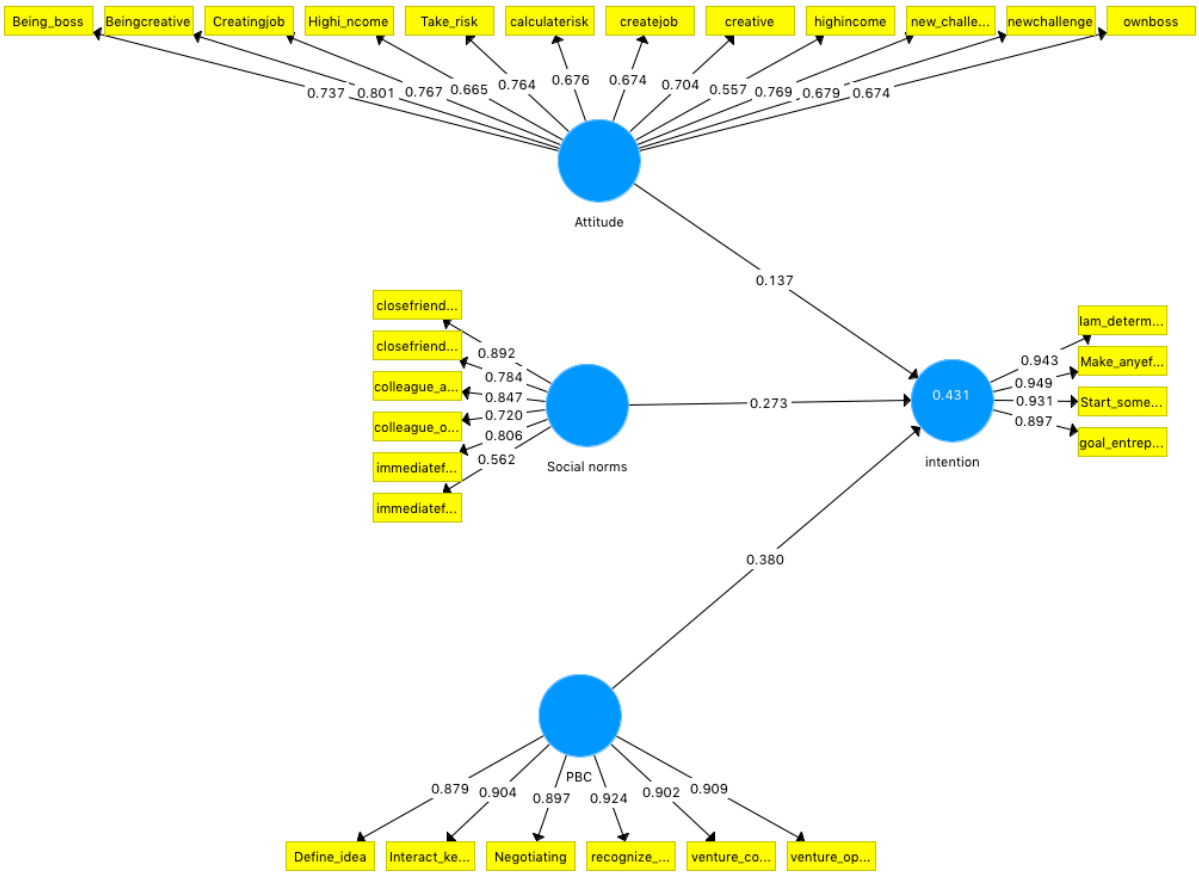
The data was analysed using Smart PLS for the pre-course data, and the results are indicated below.

Figure 5.9. Pre-course data analysis



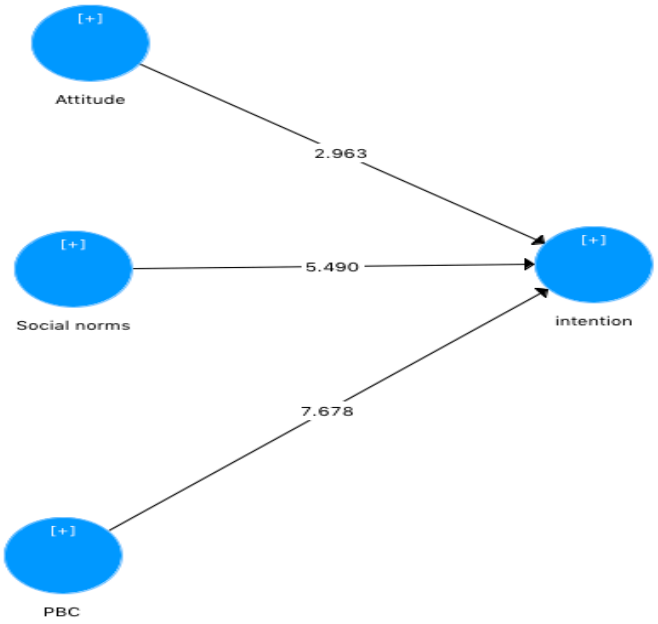
One item from Figure 5.9 was deleted because the item loading did not meet the minimum requirement of 0.4 for item reliability. After deleting one item, the researcher ran the data with Smart PLS and the results changed as shown in the Figure 5.10 and Figure 5.11.

Figure 5.10. Pre-course data analysis after eliminate item



The pre-course results in Figure 5.10 showed that R^2, is 0.431 for the INTENTION endogenous latent variable. This means that the three latent variables—attitude, social norms and PBC—explained 43% of the variance in intention.

Figure 5.11



5.2.1.2 Inner model path coefficient sizes and significance

The inner model as in Figure 5.10 shows that PBC has the strongest effect on intention (0.380), followed by social norms (0.273) and attitude (0.137). However, compared to the original result of an EIQ study by Rueda et al. (2011), the Malaysia situation is different compared to Spain. In Malaysia, the social norms have more impact on entrepreneurial intention than attitude. This difference may be due to the differences between the cultures.

H1: The path coefficient between attitude and intention is statistically significant (T value 2.963>1.96).

H2: The path coefficient between social norms and intention is statistically significant (5.490>1.96).

H3: The path coefficient between PBC and intention is statistically significant (7.678>1.96).

Thus, we can conclude that attitude, social norms and PBC are moderately strong predictors for intention.

Since the measurement model analysed was reflective, three main assessment criteria were used: internal consistency, convergent validity and discriminant validity.

5.2.2 Reliability assessment of the measurement model

Table 5.9. Reliability assessment

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Attitude	0.911	0.925	0.923	0.502
PBC	0.955	0.955	0.963	0.815
Social norms	0.869	0.914	0.899	0.602
intention	0.948	0.953	0.963	0.866

Traditionally, Cronbach's alpha is used by many researchers to show internal consistency. But the new finding by Bagozzi and Yi (1988) and Hair et al. (2012) suggests that composite reliability is more accurate to see the internal consistency. The reason why composite reliability is better is because Cronbach's alpha may over or under estimate scale reliability. The data in Table 5.9 above show that this study's composite reliabilities are high, which reflects their internal consistency reliabilities. Since the composite reliabilities are above 0.70 as recommended by Nunnally (1978), it showed internal consistencies. In addition, the average variance extracted (AVE) also passed above 0.5, which was suggested by Fornell and

Larcker (1981). Henseler (2015) also said that AVE above 0.5 are to be considered satisfactory. Based on the results, the convergent validity is confirmed.

5.2.3 Discriminant validity

Table 5.10 Discriminant validity

	Attitude	PBC	Social norms	intention
Attitude	**0.708**			
PBC	0.587	**0.903**		
Subjective norms	0.51	0.45	**0.776**	
intention	0.499	0.583	0.514	**0.93**

According to Yoo and Alavi (2001), all items should load more than 0.7 on their own construct and should load more highly on their respective construct than on the other constructs. Based on the results in Table 5.10, all correlation values are larger than other correlation values in the rows and columns, which confirms the discriminant validity.

Table 5.11.

	Attitude	PBC	Social norms	intention
Being_boss	**0.737**	0.391	0.419	0.387
Beingcreative	**0.801**	0.432	0.403	0.435
Creatingjob	**0.767**	0.439	0.379	0.416
Highi_ncome	**0.665**	0.299	0.355	0.257
Take_risk	**0.764**	0.479	0.352	0.489
calculaterisk	**0.676**	0.407	0.292	0.233
createjob	**0.674**	0.387	0.372	0.243
creative	**0.704**	0.374	0.375	0.212
highincome	**0.557**	0.419	0.352	0.363

new_challenge	**0.769**	0.524	0.374	0.444
newchallenge	**0.679**	0.372	0.319	0.213
ownboss	**0.674**	0.372	0.333	0.243
immediatefamily_agree	0.393	0.42	**0.806**	0.504
immediatefamily_opinion	0.402	0.238	**0.562**	0.171
closefriend_agree	0.491	0.441	**0.892**	0.516
closefriend_opinion	0.41	0.298	**0.784**	0.323
colleague_agree	0.42	0.355	**0.847**	0.422
colleague_opinion	0.275	0.258	**0.72**	0.29
Define_idea	0.514	**0.879**	0.409	0.545
Negotiating	0.532	**0.897**	0.398	0.512
Interact_keypeople	0.531	**0.904**	0.406	0.511
recognize_opportunity	0.544	**0.924**	0.401	0.516
venture_control	0.533	**0.902**	0.412	0.549
venture_operation	0.526	**0.909**	0.407	0.523
Iam_determinant	0.478	0.54	0.472	**0.943**
Make_anyeffort	0.49	0.585	0.517	**0.949**
Start_someday	0.499	0.54	0.494	**0.931**
goal_entrepreneur	0.383	0.501	0.423	**0.897**

Table 5.12 T statistic of path coefficient

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)
Attitude -> intention	0.137	0.138	0.049	**2.793**

PBC -> intention	0.38	0.379	0.046	**8.281**
Subjective norms -> intention	0.273	0.279	0.051	**5.401**

Based on the result from the Table 5.12 showed the all the T values are above 1.96, which means that all paths are statistically significant. The results of the T statistic for the outer loading is also larger than 1.96, which means all are highly significant.

5.3 Assessment of Measurement Model

Assessment of Internal Consistency and Convergent Validity

Table 5.13. Measure internal consistency and convergent validity

Construct	Item	Loadings	CR	AVE	Convergent validity (AVE >0.5)
Attitude	Being_boss	0.737	0.923	0.502	YES
	Beingcreative	0.801			
	Creatingjob	0.767			
	Highi_ncome	0.665			
	Take_risk	0.764			
	calculaterisk	0.676			
	createjob	0.674			
	creative	0.704			
	highincome	0.557			
	new_challenge	0.769			
	newchallenge	0.679			
	ownboss	0.674			
Social Norms	closefriend_agree	0.892	0.899	0.602	YES
	closefriend_opinion	0.784			
	colleague_agree	0.847			
	colleague_opinion	0.72			
	immediatefamily_agree	0.806			
	immediatefamily_opinion	0.562			
PBC	Define_idea	0.879	0.963	0.815	YES
	Interact_keypeople	0.904			
	Negotiating	0.897			

	recognize_opportunity	0.924			
	venture_control	0.902			
	venture_operation	0.909			
Intention	Iam_determinant	0.943	0.963	0.866	YES
	Make_anyeffort	0.949			
	Start_someday	0.931			
	goal_entrepreneur	0.897			

The Table 5.13 showed all construct convergent validity is confirmed. All construct showed that AVE at 0.5 or higher as mentioned in Bagozzi and Yi (1988).

Assessment of Discriminant Validity

Table 5.14. Fornell-Larcker Criterion analysis

	Attitude	**PBC**	**Subjective norms**	**intention**
Attitude	**0.708**			
PBC	0.587	**0.903**		
Subjective norms	0.51	0.45	**0.776**	
intention	0.499	0.583	0.514	**0.93**

Note: Diagonal elements shaded and highlighted in bold represent the square root of AVE. Off diagonal elements are simple bivariate correlations between the constructs. HOFC denotes Higher Order Formative Construct.

Table 5.15. Heterotrait Monotrait (HTMT) Criterion for Discriminant Validity

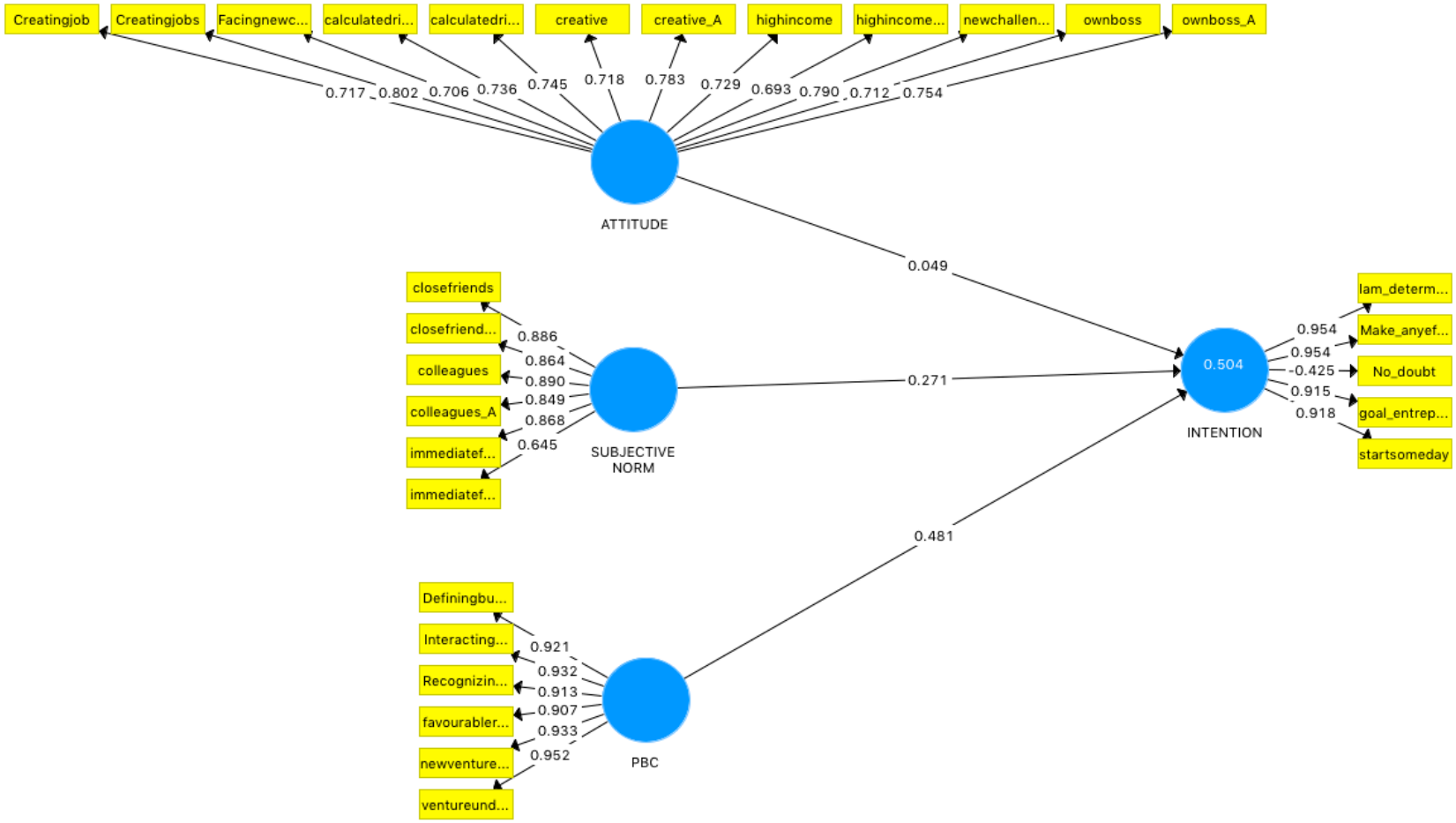
	Attitude	**PBC**	**Social norms**	**intention**
Attitude				
PBC	0.615			
Subjective norms	0.575	0.473		
intention	0.493	0.611	0.524	

Criteria: Discriminant validity is established at HTMT0.85 / HTMT0.90

Studies by Henseler et al. (2014) and Voorhees (2015) found that Fornell and Larcker and HTMT are the best measurements for discriminant validity. The results based on the Table 5.14 and Table 5.15 confirmed the discriminant validity for this model.

5.4 Post course data analysis

Figure 5.12. Post course data



The results in Figure 5.12 showed that R^2 is 0.504 for the INTENTION endogenous latent variable. This mean that the three latent variables, which are attitude, social norms and PBC, explained 50% of the variance in intention.

5.4.1 Inner model path coefficient sizes and significant

The inner model from the Figure 5.12 shows that PBC has the strongest effect on intention (0.481), followed by subjective norms (0.273) and attitude (0.049).

H4: The path coefficient between attitude and intention is statistically not significant.

H5: The path coefficient between subjective norms and intention is statistically significant.

H6: The path coefficient between PBC and intention is statistically significant.

Thus, we can conclude that subjective norms and PBC are moderately strong predictors for intention.

Table 5.16. Measure internal consistency and convergent validity

Construct	Item	Loadings	CR	AVE	Convergent validity (AVE >0.5)
Attitude	Creatingjob	0.717	0.936	0.549	YES
	Creatingjobs	0.802			
	Facingnewchallenges	0.706			
	calculatedrisks	0.736			
	calculatedrisks_A	0.745			
	creative	0.718			
	creative_A	0.783			
	highincome	0.729			
	highincome_A	0.693			
	newchallenges	0.79			
	ownboss	0.712			
	ownboss_A	0.754			
Subjective	closefriends	0.886	0.893	0.736	YES

norms	closefriends_A	0.864			
	colleagues	0.89			
	colleagues_A	0.849			
	immediatefamily	0.868			
	immediatefamilyParentsandsiblings	0.645			
PBC	Definingbusinessidea	0.921	0.973	0.858	YES
	Interactingkeypeople	0.932			
	Recognizingnewproducts	0.913			
	favourablerelationships	0.907			
	newventureoperation	0.933			
	ventureundercontrol	0.952			
intention	Iam_determinant	0.954	0.933	0.702	YES
	Make_anyeffort	0.954			
	No_doubt	-0.425			
	goal_entrepreneur	0.915			
	startsomeday	0.918			

Table 5.17. Fornell-Larcker Criterion analysis

	ATTITUDE	**INTENTION**	**PBC**	**SUBJECTIVE NORM**
ATTITUDE	**0.741**			
INTENTION	0.511	**0.858**		
PBC	0.652	0.671	**0.927**	
SUBJECTIVE NORM	0.547	0.578	0.583	**0.838**

Note: Diagonal elements shaded and highlighted in bold represent the square root of AVE. Off diagonal elements are simple bivariate correlations between the constructs. HOFC denotes Higher Order Formative Construct.

Table 5.18. Heterotrait Monotrait (HTMT) Criterion for Discriminant Validity

	ATTITUDE	**INTENTION**	**PBC**	**SUBJECTIVE NORM**
ATTITUDE				
INTENTION	0.547			
PBC	0.677	0.715		
SUBJECTIVE NORM	0.616	0.617	0.611	

Criteria: Discriminant validity is established at HTMT0.85 / HTMT0.90

The result from Table 5.16, 5.17 and 5.18 confirmed the convergent and discriminant validity of the model. However, one of the items under Intention has a value below 0.4, so it was deleted and the data were reanalysed as shown in Figure 5.13.

Figure 5.13. Post course data after elimination of weak item

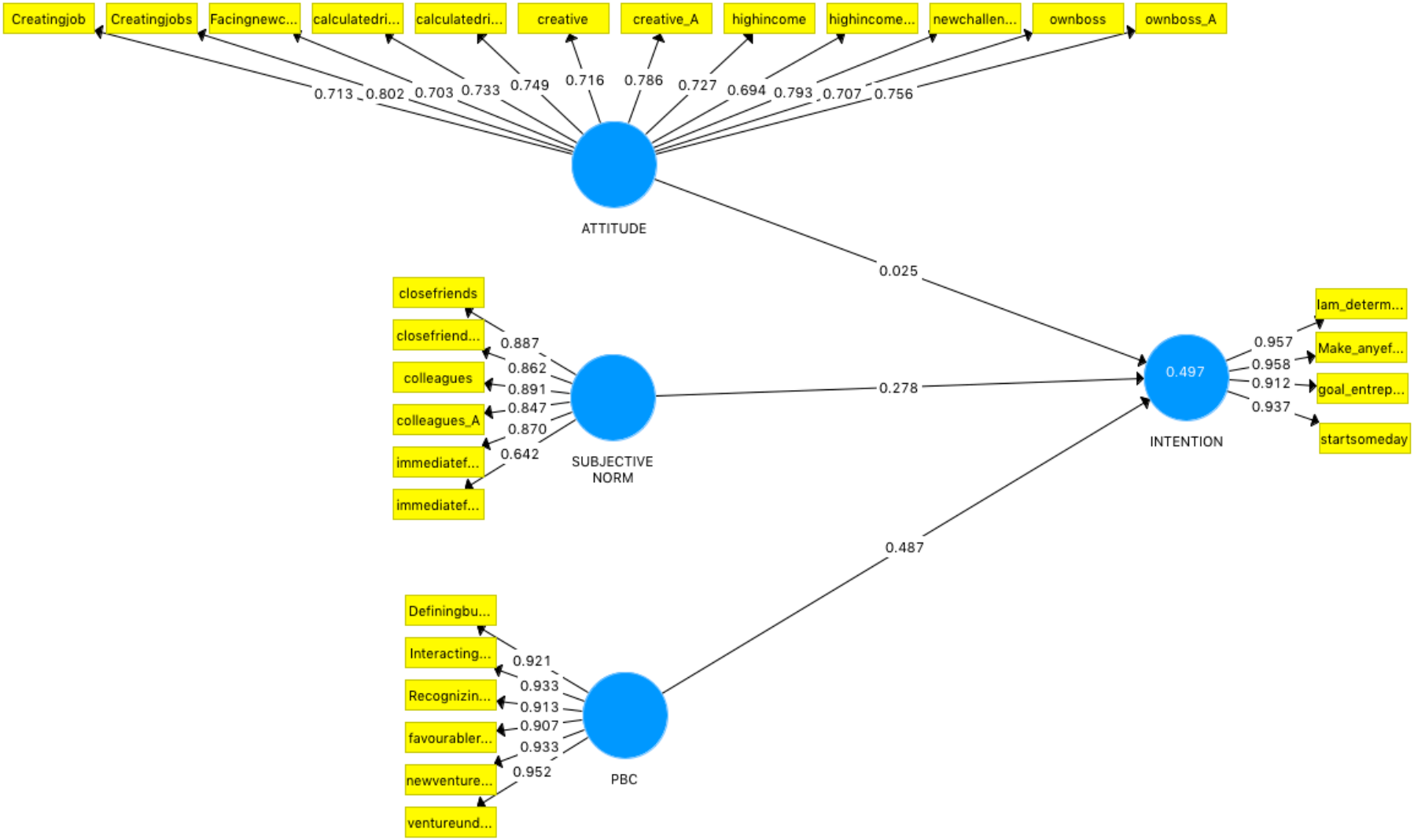


Table 5.19 Measure internal consistency and convergent validity for post course model

Construct	Item	Loadings	Composite Reliability	Average Variance Extracted (AVE)	Convergent validity (AVE >0.5)
Attitude	Creatingjob	0.713	0.936	0.549	YES
	Creatingjobs	0.802			
	Facingnewchallenges	0.703			
	calculatedrisks	0.733			
	calculatedrisks_A	0.749			
	creative	0.716			
	creative_A	0.786			
	highincome	0.727			
	highincome_A	0.694			
	newchallenges	0.793			
	ownboss	0.707			
	ownboss_A	0.756			
Subjective norms	closefriends	0.887	0.969	0.886	YES
	closefriends_A	0.862			
	colleagues	0.891			
	colleagues_A	0.847			
	immediatefamily	0.87			
	Immediatefamily Parentsandsiblings	0.642			
PBC	Definingbusinessidea	0.921	0.973	0.858	YES
	Interactingkeypeople	0.933			
	Recognizingnewproducts	0.913			
	favourablerelationships	0.907			
	newventureoperation	0.933			
	ventureundercontrol	0.952			
Intention	Iam_determinant	0.957	0.933	0.702	YES
	Make_anyeffort	0.958			
	goal_entrepreneur	0.912			
	startsomeday	0.937			

Table 5.20. Fornell-Larcker Criterion analysis

	ATTITUDE	INTENTION	PBC	SUBJECTIVE NORM
ATTITUDE	**0.741**			
INTENTION	0.495	**0.941**		
PBC	0.652	0.665	**0.927**	
SUBJECTIVE NORM	0.546	0.576	0.583	**0.838**

Note: Diagonal elements shaded and highlighted in bold represent the square root of AVE. Off diagonal elements are simple bivariate correlations between the constructs. HOFC denotes Higher Order Formative Construct.

Table 5.21. Heterotrait Monotrait (HTMT) Criterion for Discriminant Validity

	ATTITUDE	INTENTION	PBC	SUBJECTIVE NORM
ATTITUDE				
INTENTION	0.496			
PBC	0.677	0.69		
SUBJECTIVE NORM	0.616	0.595	0.611	

Criteria: Discriminant validity is established at HTMT0.85 / HTMT0.90

Based on the result from the Table 5.19,5.20 and 5.21 we can confirm the convergent and discriminant validity of the post course model.

5.5 Hypotheses results

As mentioned in the literature, a moderating variable is ‘a variable that effects the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable’ (Barron & Kenny, 1986, p. 1174). The variable is moderated through an interaction effect in SEM. This study also investigated the moderating effect of lecturer, guest speaker, course content and teaching method on intention. The tests have been done with all the moderating variable interactions between motivational antecedents and intent. Only a few results showed the moderating effect of the moderator.

The moderating variables have been measured as described below.

In the first place, the respondents were asked whether the trainer was influence to them which made them to seriously consider embarking on an entrepreneurial career in the future? (see appendix for the details of the question). The responses were coded from 0= “not at all” to 7= “to a great extent”. In this way, a higher value of the trainer variable means that the trainer is more influence to them to make them seriously thinking about future career as entrepreneur.

Secondly, the respondents were asked whether the guest speaker was influence to them which made them to seriously consider embarking on an entrepreneurial career in the future? (see appendix for the details of the question). The responses were coded from 0= “not at all” to 7= “to a great extent”. In this way, a higher value of the guest speaker variable means that the guest speaker is more influence to them to make them seriously thinking about future career as entrepreneur.

Thirdly, the respondents were asked whether the content of the course was influence to them which made them to seriously consider embarking on an entrepreneurial career in the future? (see appendix for the details of the question). The responses were coded from 0= “not at all” to 7= “to a great extent”. In this way, a higher value of the content variable means that the content is more influence to them to make them seriously thinking about future career as entrepreneur.

Finally, the respondents were asked whether the teaching method was influence to them which made them to seriously consider embarking on an entrepreneurial career in the future? (see appendix for the details of the question). The responses were coded from 0= “not at all” to 7= “to a great extent”. In this way, a higher value of the teaching method means that the teaching method is more influence to them to make them seriously thinking about future

career as entrepreneur.

The summary of the result moderating variables tested as in Table 5.22.

Table 5.22 result of moderating test

Main relationships	**Moderating variables**			
	Trainer	**Guest speaker**	**contents**	**method**
Attitude → Intention	Supported	Supported	Not supported	Not supported
Subjective norm → Intention	Not supported	Not supported	Not supported	Supported
PBC → Intention	Not supported	Not supported	Not supported	Not supported

H7: The lecturer or trainer of the entrepreneurship course moderates the relationship between attitude and intention.

Figure 5.14. Step 1 Test moderation of trainer as intervention

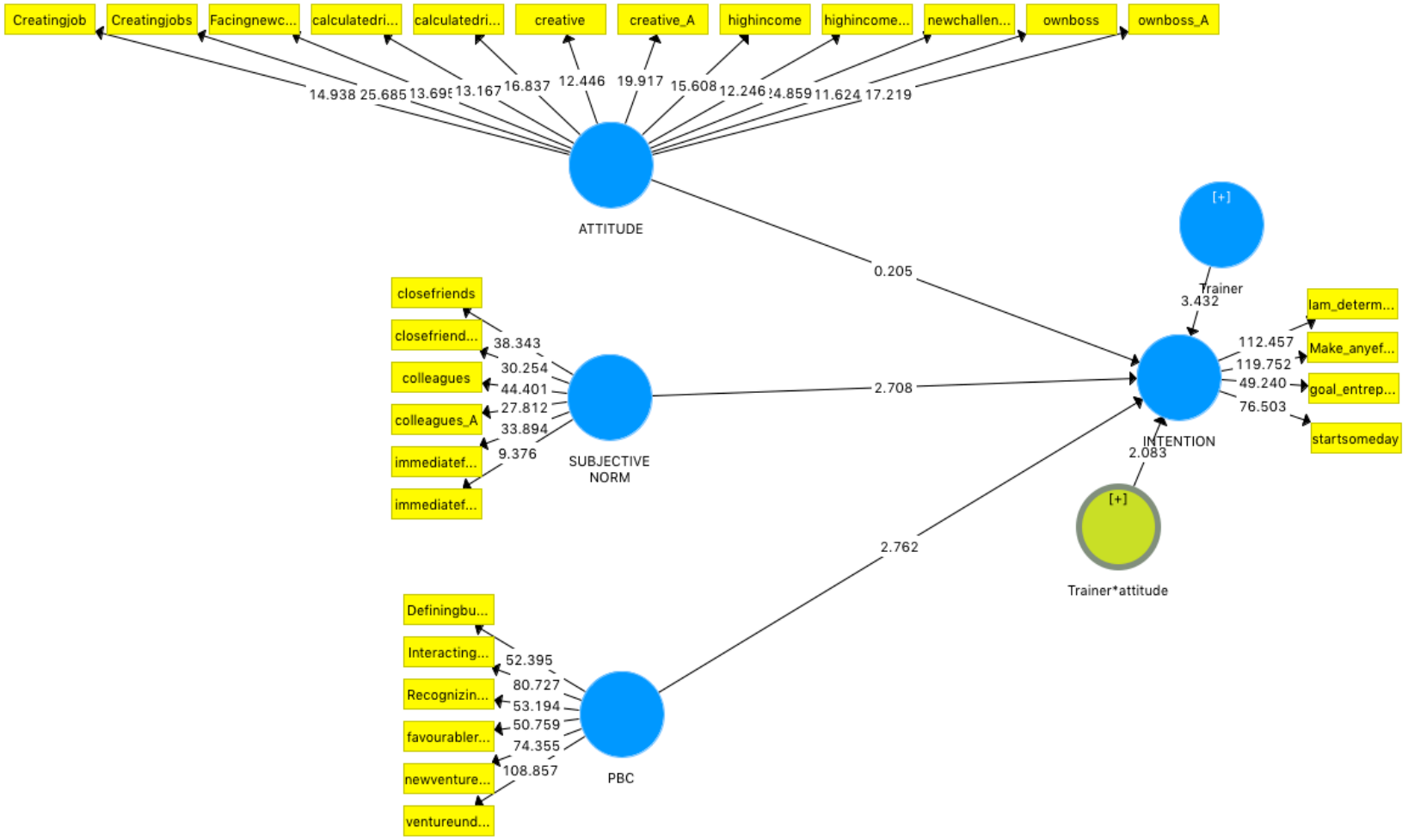
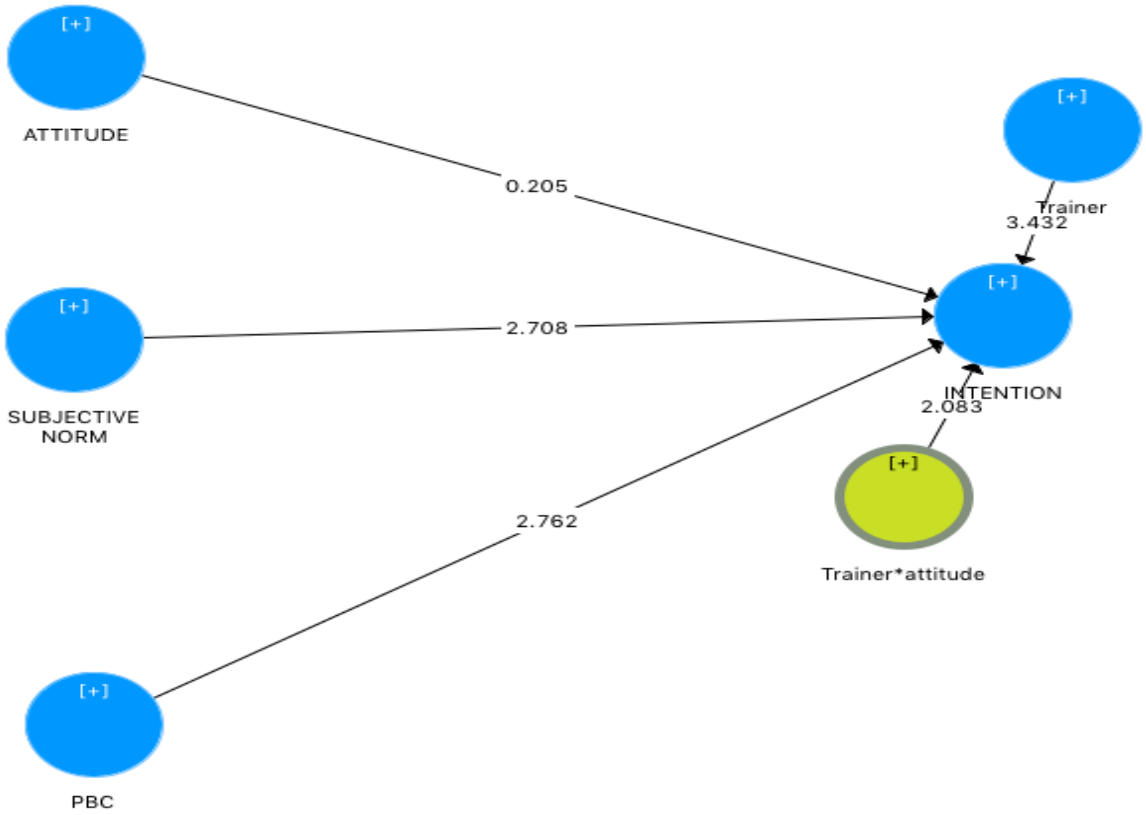


Figure 5.15. Test moderation of trainer as intervention



The result showed in continous coefficient after bootstrapping process to showed the result of T values is > 1.645 for one tail test which mean the result is significant.

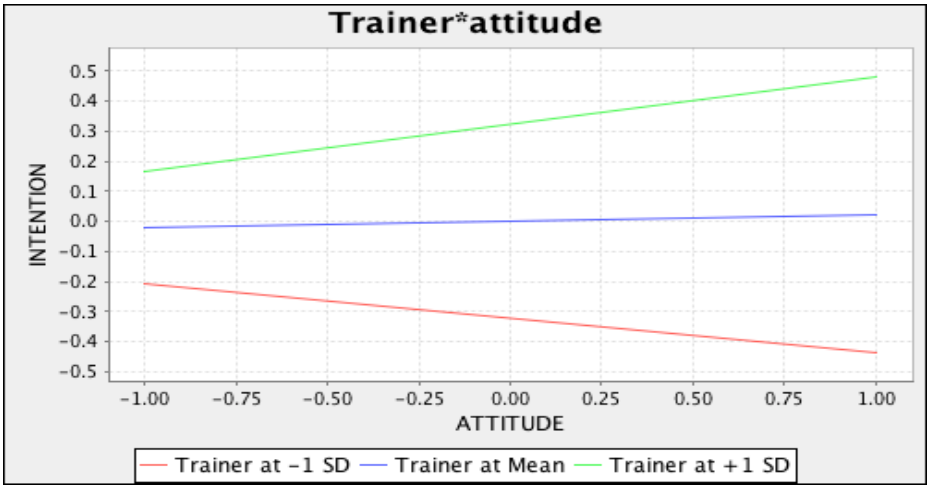


Figure 5.16

The effect size of the moderator is calculated based on the formula below:

The effect size

$f^{2=}$ $\frac{R^2 \text{ Model with moderator} - R^2 \text{ model without moderator}}{1 - \text{ Model with moderator}}$

$= \frac{0.576-0.497}{1-0.597}$

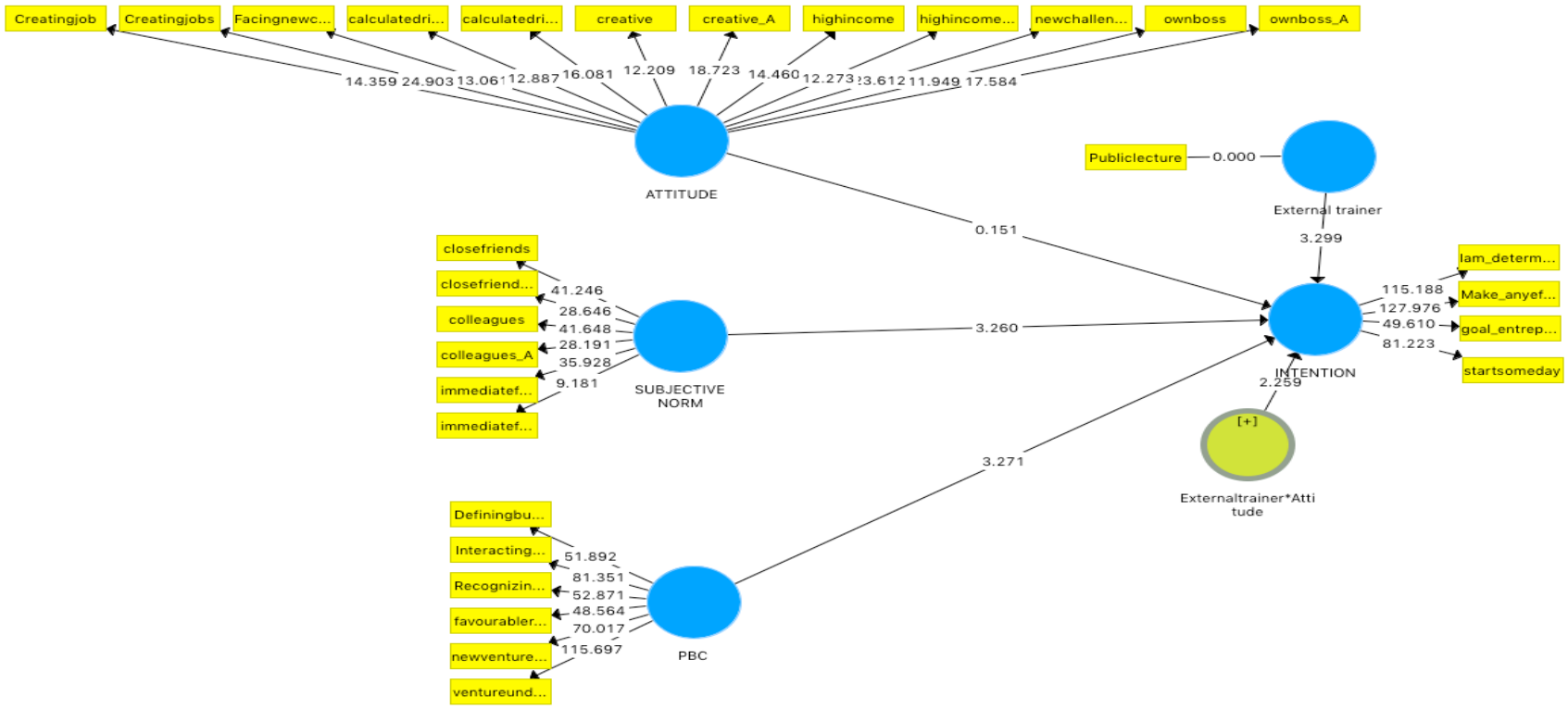
$= 0.186$

Based on the finding above, f^2 is 0.186 which is between 0.15 and 0.35, which means the effect size can be regarded as moderate based on Cohen (1988).

The finding shows there was a significant moderate level of effect of the trainer or the lecturer for the course on attitude.

H8: The external speaker of the entrepreneurship course moderates the relationship between attitude and intention

Figure 5.17. Step 1 Test moderation of external trainer as intervention



The result showed in continous coefficient after bootstrapping process to showed the result of T values is > 1.645 for one tail test which mean the result is significant

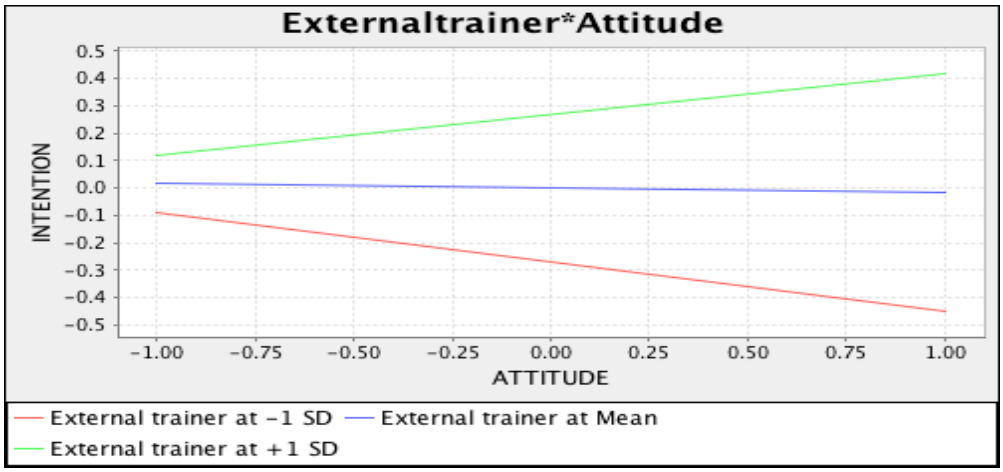


Figure 5.18

The effect size

$f^{2=}$ R^2 Model with moderator- R^2 model without moderator

1-Model with moderator

$$\frac{0.565-0.497}{1-0.565}$$

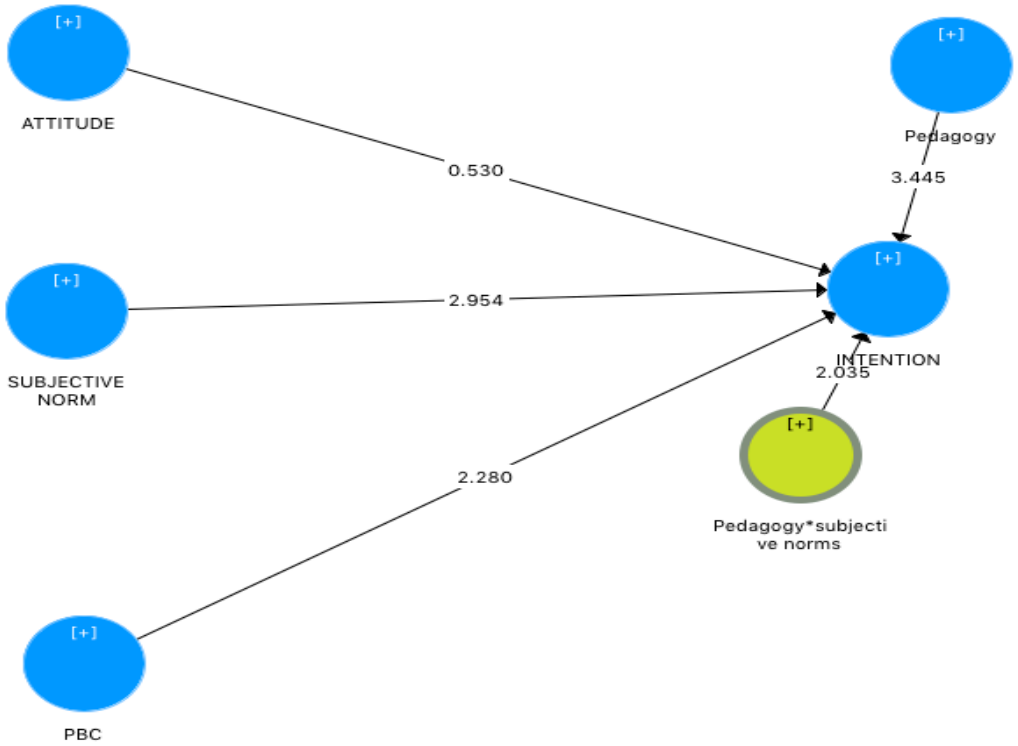
=0.156

Based on the finding above, f^2 equals 0.156, which is between 0.15 and 0.35, which means the effect size can be regarded as moderate based on Cohen (1988).

The finding shows there was a significant moderate level of effect of trainer or the lecturer of the course on attitude.

H9: The teaching method use in the entrepreneurship course moderates the relationship between subjective norms and intention.

Figure 5.19. Test moderation of teaching method as intervention



The result showed in continous coefficient after bootstrapping process to showed the result of T values is > 1.645 for one tail test which mean the result is significant.

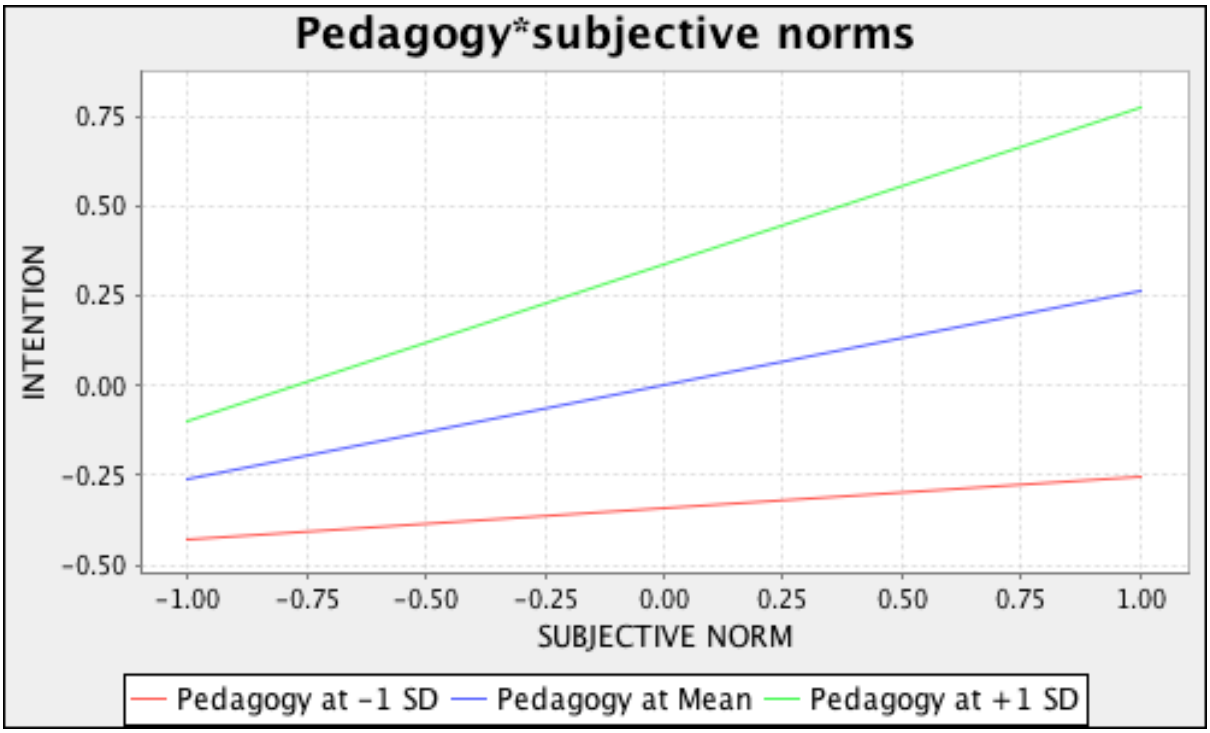


Figure 5.20

The effect size

$f^{2=}$ R^2 Model with moderator- R^2 model without moderator

2- Model with moderator

F^2 =0.620 -0.497

1-0.620

=0.323

Based on the finding above, f2 equals 0.323, which is between 0.15 and 0.35, which means the effect size can be regarded as moderate based on Cohen (1988).

The findings show there was a significant moderate level of effect of pedagogy for the course with subjective norms.

5.6 Research question related to the objective of the study

In addition to the hypotheses, there are a few research questions that will contribute to the entrepreneurship education field, especially in the case of UKM as shown below:

1) Does the class follow the syllabus that have been handed out to students?

The feedback from students shows that 95.3% of students said the lecturer followed the syllabus that was given to them before the class started.

2) Are you planning to enroll in the Junior Start Up course in the future?

Table 5.23. Respondent plan to enrol in Junior Start Up course

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	58	38.9	38.9	38.9
	No	91	61.1	61.1	100.0
	Total	149	100.0	100.0	

Table 5.24. Respondents plan to enrol in Junior Start Up base on gender

		Gender		Total
		Male	Female	
Enroll Junior Start	Yes	22	36	58
	No	20	71	91
Total		46	110	149

The students were asked if they planned to enrol in the higher level entrepreneurship course in the future. The data showed that 41% of the students intend to enrol in the Junior Start Up

course, which is an elective course in the second year. The data showed that 25% of the students who are female plan to take the Junior Start Up course. The feedback from students also showed that some students did not know the higher-level course existed.

3) Do you currently feel that you have a good idea to launch as a business?

Table 5.25. Respondent opinion whether have good idea for business

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	73	49.0	49.0	49.0
	No	76	51.0	51.0	100.0
	Total	149	100.0	100.0	

Table 5.26. Respondent opinion whether have good idea for business base on gender

	Gender		
Have good Idea	Male	Female	Total
Yes	24	49	73
No	18	58	76
Total	42	107	149

The students were asked whether, at that current point in time, they thought they had a good idea for business. Based on the data from Table 5.25, 49% of the respondents believed they had a good idea. Of those, 67.1% are female students, which accounted for 49 students base on answer on Table 5.26.

4) What do you think are the barriers to starting your own business now?

Table 5.27. Barrier to start business

Barrier	Number of students
Lack of knowledge/experience	121
Lack of capabilities	89
Lack of entrepreneurial characteristic	78
Lack of entrepreneurial motivation	65
Lack of financial source	126
Other	8

The findings showed that the main barrier for the students to start a business is lack of financial resources. This finding matched the result by Haji Din (1992) who found a similar outcome.

5) Does the course and support during the course CMIE 1012 provide enough opportunity for you to start a business?

The students were asked if the course and support during the course CMIE1012 provided them enough opportunity to start a business. The findings are shown in the Table 5.28.

Table 5.28. The perception to students whether the course provide opportunity for them to start business

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	73	49.0	49.0	49.0
	No	76	51.0	51.0	100.0
	Total	149	100.0	100.0	

Of the respondents, 49% believe the course gave them enough support to start a business. An additional question was asked to those who answered 'No' regarding the reason they felt they didn't have enough support. The details are given in the Table 5.29 below.

Table 5.29. The reason student felt did not have opportunity to start business

Reason	Number of answer
Not enough technical support	26
No financial support	56
Not enough attraction to start a business	36
Not enough skill develops during the course	36
Not enough knowledge	38
Not enough role model that attract me to this behavior	21
Not enough time since have commitment with other studies	51
Other	2

The Table 5.29 showed that no financial support and not enough time due to study commitments were the major reasons students feel they cannot start business while studying.

6) If you finally decided to create your own business, you would mainly do so because...?

The students were asked for the reason they would start a business. In the questionnaire the question for the reason to start business use 7 point Likert scale, the rating of 1 refer to the lack of better alternative employment. The rating 7 is taking advantage of a business opportunity, meaning the students were asked if they will become involved in business due to necessity or opportunity.

Table 5.30. The reason to start business

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	2.0	2.0	2.0
	2	2	1.3	1.3	3.4
	3	3	2.0	2.0	5.4
	4	34	22.8	22.8	28.2
	5	44	29.5	29.5	57.7
	6	35	23.5	23.5	81.2
	7	28	18.8	18.8	100.0
	Total	149	100.0	100.0	

Table 5.31. The mean for the reason to create business

N	Valid	149
	Missing	0
Mean		5.22

The results show the mean is 5.22, which is strong and suggests the reason for getting involved in business is due to opportunity. This matches the study by GEM (2016), which shows that the trend of entrepreneurship in Malaysia has changed from necessity to opportunity driven.

7) The level of satisfaction regarding the effect of the course

The students were asked to rate in their level of satisfaction with the effect of the course. Below is the question that was asked:

1) Entrepreneurship knowledge that you have gained

2) Entrepreneurial skill/competencies developed during the course

3) Lecturer's teaching skill in making the course attractive to you

4) Help you realise potential

5) Help you decide your future career

Table 5.32. The mean for satisfaction base on effect of the course

		Entrepreneurship knowledge	Entrepreneurial skill	Teaching skill	Realize potential	Help decide career
N	Valid	149	149	149	149	149
	Missing	0	0	0	0	0
Mean		4.83	4.69	4.78	4.66	4.50

The mean of the results are shown in the Table 5.32. In general, they have moderately gained knowledge, skills, realised their potential and, in a way, helped them to decide their future career.

8) Students' intention career path

Table 5.33. Student intention for future career

Measure	Mean (SD)		Mean diff
	Pre course	Post course	
Be entrepreneur	5.04 (1.604)	4.70 (1.639)	-0.34
Private company	4.96 (1.387)	4.97 (1.409)	0.01
Public Sector	4.75 (1.422)	4.87 (1.408)	0.12
NGO	4.60 (1.530)	4.91 (1.430)	0.31

The Table 5.33 showed a comparison of the career preference between the pre- and post-course students. The results showed that before the course, the students' preference to be

entrepreneurs was slightly higher than other career choices. After the course, the preference to work with a private company increased and can be seen as a reduction in preference to be an entrepreneur. It might be argued that the reason could be because the sample for the post-course is smaller or the course made students aware of their career preference. A greater knowledge and information about entrepreneurship may make students more aware of the difficulties and responsibilities associated, thus decreasing the level of career choice intention. Nevertheless, this is not necessarily a bad result, since those still exhibiting a high intention are now better informed and acquainted with entrepreneurship, and they may be more committed (or more likely) to effectively start a new venture.

Interest in entrepreneurship

To assess the impact of the course on the students, they were asked before and after about their interest in entrepreneurship. The researcher computed the mean score before and after the course. Based on that, we can see the difference between before and after the course. The students perceived higher interest in entrepreneurship after the course.

9) Effect of course on interest in entrepreneurship based on gender

Table5.34. Interest in entrepreneurship base on gender

	Mean (SD)		
Gender	**Pre-course**	**Post course**	**Mean diff**
Male	4.81 (1.604)	5.14 (1.632)	0.33
Female	4.08 (1.590)	4.51 (1.417)	0.43

The results from the Table 5.34 showed that the interest in entrepreneurship increased for both genders at almost similar rates, but the male students showed higher interest in entrepreneurship than female students.

10) Effect of course on interest in entrepreneurship based on ethnicity

Table 5.35. Interest in entrepreneurship based on ethnicity

Race	Mean (SD)		Mean diff
	Pre-course	**Post course**	**Mean diff**
Malay	4.36 (1.540)	4.76 (1.436)	0.4
Chinese	3.99 (1.827)	4.35 (1.756)	0.36
Indian	4.15 (1.895)	5.00 (0.816)	0.85
Other	3.97 (1.732)	5.00 (1.673)	1.03

The results in Table 5.35 showed that in general, the students' interest in entrepreneurship increased after taking the course. Based on the data, the interest of the Bumiputera or the Malays is much higher compared to the Chinese at the end of the course. However, the data showed that the Indians and others have much higher interest. The possibility of that could be due to the small number of respondents for the Indians and other ethnicities. To verify this will require a higher sample for the Indian ethnicity and others.

11) Effect of course on interest in entrepreneurship based on faculty

Table 5.36. Interest in entrepreneurship based on Faculty

Faculty	**Mean**	**SD**	**Mean**	**SD**	**Mean diff**
Dentistry	4.70	1.636	5.33	1.155	0.63
Economic and management	4.78	1.443	5.61	1.305	0.83
Engineering and build environment	4.50	1.627	5.21	1.351	0.71
Education	4.30	1.703	4.50	3.000	0.2
Health Sciences	3.59	1.538	4.39	1.290	0.8
Information science and Technology	6.50	.707	4.80	1.229	-1.7
Islamic studies	4.43	1.532	4.89	1.537	0.46
Law	3.89	1.965	4.50	1.690	0.61

Medicine	3.77	1.687	4.13	1.642	0.36
Pharmacy	4.29	1.268	3.57	1.902	-0.72
Science and technology	4.19	1.629	4.60	1.095	0.41
Social science and humanities	4.20	1.754	4.67	1.759	0.47

The results from Table 5.36 show that the interest in entrepreneurship increased for all faculty except Information Science and Technology and Pharmacy. From the results, it seems that the Faculty of Economic and Management has the highest interest in entrepreneurship. A comparison of interest before and after the course showed Faculty of Economic and Management had the biggest difference in pre and post-course responses. Further analysis on the Faculty of Science and Technology and Pharmacy showed that the lecturers followed the course syllabus for the course for the Faculty of Information Science and Technology. However, for the Pharmacy, 14% of the students said that the lecturer did not follow the syllabus. The question remains about the drop in the level of interest about whether they feel that entrepreneurship is not in their field or if there are other factors that contribute. Of course, it could also be argued that the reason is due to the small sample for the post-course respondents. The reason why the interest from Faculty of Economic and Management is high could be due to the some of the students from that faculty majoring in entrepreneurship, which supports the findings, like Kolvereid and Moen (1997).

12) Particular event that in the course that triggered interest in entrepreneurship

Detailed breakdown by number of students according to ethnicity and gender is shown in Table 5.37 and and Table 5.38:

Table 5.37. Event that triggered interest in entrepreneurship base on gender

	Yes	**No**
Male	14	28
Female	30	77

Table 5.38. Event that triggered interest in entrepreneurship base on ethnic

	Yes	No
Malay	31	71
Chinese	9	25
Indian	2	5
Other	2	4

As proposed by Soutaris et al. (2007), it is important to know what triggers the interest in entrepreneurship. The trigger is important to strengthen the intention as pointed out by Heinonen and Poikkijoki (2006, p. 86), who said that 'Intention is a necessary but not sufficient condition for entrepreneurship, thus some kind of a triggering event is needed. This may be internal or external'. This study showed that 48 of the respondents said something triggered their interest in entrepreneurship. A breakdown by gender showed that the female students were triggered more than male students. In terms of ethnicity, the Malays were triggered the most. However, this result could also be due to the number of respondents was highest among females and Malays. The details for their answer will be in appendix at the end of the thesis.

13) Effect of course on gender

Overall, the results from the Table 5.39 showed improvement of skills and competencies in the participants for both male and female students. The mean results show the impact of the course on males is higher than female students.

Table 5.39. Effect of course toward students' traits and skill

Gender	Stage	Pre- course			Post course			Diff mean
	Skill/Trait	N	Mean	SD	N	Mean	SD	
Male	Decision	126	4.93	1.279	46	5.24	1.376	0.31
	creativity	126	4.7	1.31	46	5.12	1.273	0.42
	Problem solving	126	4.94	1.263	46	5.29	1.293	0.35
	opportunity	126	4.51	1.435	46	5.36	1.246	0.85
	Presentation	126	4.51	1.457	46	5.21	1.138	0.70
	communication	126	4.75	1.294	46	5.6	1.106	0.85
	negotiation	126	4.52	1.446	46	5.19	1.153	0.67
	networking	126	4.43	1.428	46	5.17	1.342	0.74
	independent	126	5.24	1.317	46	5.00	1.230	-0.24
	proactive	126	4.86	1.331	46	5.17	1.286	0.31
	Self-efficacy	126	4.89	1.393	46	5.29	1.255	0.40
	locus of control	126	4.71	1.289	46	5.21	1.138	0.50
	risk taking	126	4.75	1.372	46	5.21	1.371	0.46
Female	Decision	367	4.35	1.157	110	4.84	.982	0.49
	creativity	367	4.24	1.183	110	5.01	1.153	0.77
	Problem solving	367	4.49	1.086	110	4.86	1.068	0.37
	opportunity	367	4.17	1.281	110	4.71	1.213	0.54
	Presentation	367	4.29	1.238	110	4.66	1.157	0.37
	communication	367	4.56	1.24	110	5.24	1.188	0.68
	negotiation	367	4.37	1.232	110	4.81	1.100	0.44
	networking	367	4.39	1.258	110	4.95	1.254	0.56
	independent	367	4.97	1.216	110	5.16	1.167	0.19
	proactive	367	4.42	1.247	110	4.95	1.076	0.53
	Self-efficacy	367	4.5	1.221	110	4.90	1.115	0.40
	locus of control	367	4.34	1.227	110	4.75	1.237	0.41
	risk taking	367	4.29	1.281	110	4.86	1.349	0.57

The data in Table 5.40 showed that males get more benefit from the course in terms of fundamental, people skills, personal and conceptual skills. This finding supports a study by Hooff and Nadham (2012), which points out that even though the majority of females are better than males in education, they lack entrepreneurial attitudes.

Table 5.40. Effect of course toward students skill base on skill category and gender

Gender	**Stage**	**Pre-course**			**Post course**			**Mean diff**
	Skill	**N**	**Mean**	**SD**	**N**	**Mean**	**SD**	
Male	Fundamental skill (number/tech)	126	4.94	1.355	46	5.12	1.435	0.18
	People skill	126	4.79	1.281	46	5.24	1.206	0.45
	Personal skill	126	4.83	1.22	46	5.40	1.170	0.57
	Conceptual	126	4.87	1.242	46	5.43	1.129	0.56
Female	Fundamental skill (number/tech)	367	4.5	1.169	110	4.77	1.218	0.27
	People skill	367	4.57	1.106	110	4.85	1.053	0.28
	Personal skill	367	4.64	1.102	110	5.05	1.111	0.41
	Conceptual	367	4.56	1.134	110	4.84	1.092	0.28

14) Effect of course on ethnicity

Table 5.41. Effect of course toward students traits and skill base on ethnicity

Race	Stage	Pre- course			Post course			Mean diff
	Skill/trait/competencies	N	Mean	SD	N	Mean	SD	
Malay	Decision	358	4.5	1.213	108	5.05	1.129	0.55
	creativity	358	4.35	1.276	108	5.13	1.096	0.78
	Problem solving	358	4.54	1.175	108	5.09	1.100	0.55
	opportunity	358	4.28	1.352	108	5.04	1.185	0.76
	Presentation	358	4.28	1.341	108	4.93	1.092	0.65
	communication	358	4.53	1.298	108	5.40	1.037	0.87
	negotiation	358	4.36	1.308	108	5.01	1.067	0.65
	networking	358	4.34	1.342	108	5.09	1.195	0.75
	independent	358	5.08	1.265	108	5.14	1.081	0.06

	proactive	358	4.52	1.289	108	5.05	1.111	0.53
	Self- efficacy	358	4.56	1.316	108	5.12	1.120	0.56
	Locus of control	358	4.39	1.276	108	4.97	1.156	0.58
	Risk taking	358	4.4	1.333	108	5.10	1.346	0.7
Chinese	Decision	78	4.64	1.151	35	4.74	1.163	0.1
	creativity	78	4.36	1.032	35	4.62	1.371	0.26
	Problem solving	78	4.86	0.99	35	4.53	1.285	-0.33
	opportunity	78	4.06	1.313	35	4.50	1.398	0.44
	Presentation	78	4.41	1.167	35	4.41	1.305	0
	communication	78	4.71	1.046	35	5.06	1.536	0.35
	negotiation	78	4.4	1.177	35	4.74	1.310	0.34
	networking	78	4.56	1.076	35	4.71	1.508	0.15
	independent	78	4.94	1.143	35	4.97	1.467	0.03
	proactive	78	4.62	1.187	35	4.85	1.282	0.23
	Self-efficacy	78	4.79	1.166	35	4.65	1.346	-0.14
	Locus of control	78	4.65	1.138	35	4.50	1.462	-0.15
	Risk taking	78	4.46	1.17	35	4.44	1.397	-0.02
Indian	Decision	27	4.48	1.397	7	4.86	.690	0.38
	creativity	27	4.33	1.109	7	5.29	.488	0.96
	Problem solving	27	4.74	1.228	7	5.43	.535	0.69
	opportunity	27	4.44	1.251	7	4.43	.976	-0.01
	Presentation	27	4.74	1.095	7	4.86	1.215	0.12
	communication	27	5.04	1.224	7	5.57	.535	0.53
	negotiation	27	4.81	1.178	7	4.43	.976	-0.38
	networking	27	4.63	1.305	7	5.14	.900	0.51
	independent	27	4.67	1.441	7	5.43	1.134	0.76
	proactive	27	4.48	1.156	7	5.00	.577	0.52
	Self-efficacy	27	4.59	0.888	7	4.86	.378	0.27
	Locus of control	27	4.52	1.369	7	5.00	.816	0.48
	Risk taking	27	4.48	1.578	7	5.14	1.069	0.66
Other	Decision	30	4.13	1.196	6	4.67	1.033	0.54
	creativity	30	4.43	1.331	6	5.67	1.633	1.24
	Problem solving	30	4.57	1.104	6	5.17	1.169	0.6
	opportunity	30	4.2	1.157	6	5.17	1.472	0.97
	Presentation	30	4.6	1.248	6	5.17	1.472	0.57
	communication	30	4.87	1.196	6	5.67	1.506	0.8
	negotiation	30	4.57	1.431	6	5.00	1.095	0.43
	networking	30	4.43	1.357	6	5.33	1.633	0.9
	independent	30	5.17	1.085	6	5.17	1.329	0
	proactive	30	4.5	1.57	6	5.33	1.366	0.83
	Self-efficacy	30	4.5	1.383	6	5.33	1.211	0.83
	Locus of control	30	4.33	1.124	6	5.33	1.033	1
	Risk taking	30	4.37	1.326	6	5.33	1.211	0.96

In chapter 2 the history showed that the Chinese ethnic are more entrepreneurial compared to the Malays. In this sense, the results in Table 5.41 showed that the Malays got more from the course compared to the Chinese. This could be due to the medium of language use, as the Malay language is used and the guest speakers were also from the Malay ethnicity. Alternatively, it may also be due to the fact that Malays are less familiar with entrepreneurship, and therefore they get more out of the course. In contrast, Chinese would have already developed some of these skills through vicarious learning from role models or helping in the family business, so they develop them to a lesser extent.

Table 5.42. Effect of course toward students' skill base on skill category and ethnicity

Race	Stage	Pre-course			Post course			Mean diff
	Skill/trait/ competencies	N	Mean	Std. Dev.	N	Mean	Std. Dev.	
Malay	fundamental skills (number/tech)	358	4.62	1.271	108	4.95	1.3	0.33
	People skill	358	4.63	1.171	108	5.01	1.085	0.38
	Personal skill	358	4.64	1.174	108	5.15	1.103	0.51
	Conceptual	358	4.61	1.218	108	5	1.099	0.39
Chinese	fundamental skills (number/tech)	78	4.62	1.047	35	4.5	1.331	-0.12
	People skill	78	4.67	1.053	35	4.79	1.225	0.12
	Personal skill	78	4.85	1.007	35	5	1.255	0.15
	Conceptual	78	4.79	0.998	35	4.85	1.282	0.06
Indian	fundamental skills (number/tech)	27	4.67	1.301	7	5	0.577	0.33
	People skill	27	4.78	1.34	7	4.86	0.69	0.08
	Personal skill	27	4.89	1.086	7	5.57	0.976	0.68
	Conceptual	27	4.74	1.13	7	5.43	0.787	0.69
Other	fundamental skills (number/tech)	30	4.5	1.196	6	5.33	1.211	0.83
	People skill	30	4.43	1.073	6	5.17	1.329	0.74
	Personal skill	30	4.6	1.003	6	5.5	1.225	0.9
	Conceptual	30	4.57	1.006	6	5.5	1.049	0.93

A comparison between the Malay and Chinese ethnicities from the Table 5.42 showed that the Malays get more in terms of fundamental, people skills, personal skills and conceptual skills. The Indian ethnicity and other ethnicities also showed a high impact from the course. However, due to the small number of respondents from these two categories, this result cannot be generalised. To get better results, there should be future research with higher respondents from these two categories.

CAPÍTULO 6: RESUMEN Y RECOMENDACIONES

Este capítulo resume la investigación realizada. De igual forma, el resumen de los hallazgos, las limitaciones del estudio y las futuras propuestas de investigación también se incluyen en este capítulo.

6.1 RESUMEN DE LOS RESULTADOS

Este estudio contribuye a la educación emprendedora (EE) utilizando la teoría del comportamiento planificado (TCP) como marco de referencia. Más concretamente, midió la eficacia de la EE en Malasia o, más concretamente, en Universiti Kebangsaan Malaysia (UKM). Los revisión de la literatura muestra una escasez de investigación en este sentido, y en particular, la falta de análisis utilizando el modelo de ecuaciones estructurales (SEM), a la que este estudio también pretendía contribuir.

Los problemas en Malasia y en UKM se han destacado en el capítulo 2. En resumen, los actuales problemas que enfrenta el gobierno de Malasia son: el desempleo de los graduados y un número limitado de graduados universitarios que participan en la creación de empresas. Sobre la base de los esfuerzos realizados por el gobierno desde que comenzó la Nueva Política Económica (NEP) en 1971, estos resultados son devastadores.

Se han formulado preguntas sobre la eficacia de la educación para el emprendimiento en Malasia. Muchos esfuerzos para desarrollar emprendedores a través de la educación terciaria comenzaron en la década de 1990, pero a pesar de estos esfuerzos, menos del 2% de los graduados se convierten en empresarios. Según estadísticas del Departamento de Estadística de Malasia (2009), aunque el número de graduados involucrados en la creación de empresas ha aumentado, el porcentaje de la población general está disminuyendo.

Para abordar la cuestión de la eficacia de la EE en Malasia, este estudio desarrolló la investigación basada en la TCP, ya que la intención es el mejor predictor de la conducta. Esta teoría también ha sido probada y usada en muchos campos. También hay llamamientos para llevar a cabo una medición estandarizada del uso de esta teoría por los académicos para evaluar la EE, ya que existe una enorme diversidad en todo el mundo.

A partir del modelo teórico, se desarrolló un cuestionario basado en el cuestionario de intención empresarial (EIQ) que ya ha sido validado. El estudio se centró en tres elementos de la EE como forma de intervención para evaluar la eficacia de esa EE. El primer elemento es el formador, que podría ser el profesor y / o el orador invitado. La combinación permite ofrecer teoría, práctica e inspiración a los estudiantes. El segundo elemento es el método de enseñanza y el último elemento es el contenido del curso.

El resultado de la medición pre-curso mostró que el antecedente motivacional influyen en la intención de los estudiantes hacia el emprendimiento. El control percibido sobre el comportamiento (CPC) es la variable más fuerte y permitió explicar el 38% de la varianza de la intención emprendedora. Sin embargo, el resultado de la medición post-curso mostró que la actitud personal (AP) no influye significativamente en la intención. El CPC representó el 48% de la varianza en la intención. Basado en esto, cualquier intervención relacionada con el CPC tendrá una mayor probabilidad de influir en la intención.

Para la intervención, el estudio investigó si el entrenador o el orador invitado tuvo un impacto en la intención. Estos agentes no sólo transmiten conocimiento sino que también influyen en la intención de los estudiantes porque sirven como un modelo de conducta. Se preguntó a los estudiantes hasta qué punto el conferenciante y el orador invitado les hacían considerar seriamente la posibilidad de embarcarse en una carrera emprendedora en el futuro. Los resultados indicaron que tanto el entrenador como el orador invitado moderan la relación entre actitud e intención. El formador y el orador invitado moderan la relación entre la actitud

y la intención, tal vez porque su función como modelos de conducta realza el interés de los estudiantes por el espíritu empresarial.

El estudio examinó si el contenido y el método de enseñanza influyeron en la relación entre los antecedentes motivacionales y la intención. El resultado demostró que el método de enseñanza modera la relación entre la norma social y la intención. El estudio también explora si hubo un evento o desencadenante en el curso que atrajese el interés de los estudiantes hacia el emprendimiento.

Otros hallazgos de este estudio indicaron que las estudiantes mujeres tienen menor interés empresarial que los estudiantes varones. Este hallazgo es similar a muchos otros estudios en los que se encontró que el hombre mostraba más interés en el emprendimiento. Mediante la comparación del interés hacia el emprendimiento, se encontró que los Bumiputera o Malay tienen mayor interés que los chinos. Sin embargo, este resultado podría ser debido al número mucho menor de participantes chinos que de participantes malayos. Para verificar los resultados, se debería realizar otro estudio con un mayor número de encuestados chinos y de otras etnias. La comparación del interés en el emprendimiento entre las distintas facultades mostró que la Facultad de Economía y Gestión tiene el mayor interés. Este hallazgo es similar a muchos resultados de otros estudiosos. En general, este estudio confirmó que la EE tiene un impacto positivo en la intención emprendedora del estudiante y en el desarrollo de sus habilidades.

6.2 IMPLICACIONES DE LOS RESULTADOS Y RECOMENDACIONES

Esta sección se organiza separando las implicaciones derivadas de cada uno de los componentes de la EE analizados en esta tesis doctoral.

1) El papel de entrenador / orador invitado

Los resultados indicaron que el papel de un entrenador puede influir en la intención de los estudiantes, por lo que el curso debe continuar incluyendo tanto a profesores como a oradores invitados. Soutaris et al. (2007) sugieren que los formadores en la universidad deberían recibir capacitación sobre cómo inspirar a los estudiantes hacia el emprendimiento. En Aronsson (2004), Birch señala que las habilidades emprendedoras pueden ser aprendidas, pero el sistema educativo no tiene los maestros adecuados para ello. En la actualidad, se contrata a profesores basándose en sus calificaciones académicas. La capacitación para el emprendimiento para CMIE 1012 fue, como mucho, un curso de una semana. Esto es muy diferente de los profesores de las escuelas primarias y secundarias, que son contratados en base a sus calificaciones académicas y reciben una formación a largo plazo sobre docencia en instituciones especializadas, por parte del Ministerio de Educación Superior. Como recomendación para el futuro, la universidad debería considerar la posibilidad de ofrecer a los profesores o capacitadores cursos específicos de capacitación por parte del Ministerio. Un informe de la Comisión Europea (2004) también recomendó un curso para profesores de emprendimiento sobre cómo motivar a los estudiantes y fomentar el comportamiento emprendedor.

Aronsson (2004) también sugirió que los formadores deberían ser personas con experiencia empresarial. UKM debería considerar la posibilidad de permitir que los profesores de emprendimiento participasen en proyectos empresariales, o contratar a empresarios como profesores para este campo.

2) El papel del método de enseñanza y del contenido

Los hallazgos de este estudio muestran que las estudiantes tienen baja intención emprendedora, y el impacto de las habilidades, características y desarrollo de las competencias es también bajo en comparación con los estudiantes varones.

En todo el mundo, el progreso de las mujeres emprendedoras sigue siendo frecuentemente inferior al de los hombres. Hooff y Nandram (2012) ponen de relieve que la menor conducta de riesgo, los estereotipos de ocupaciones, la discriminación, la cultura y la baja confianza en sí mismos son algunas de las razones por las que hay menos mujeres empresarias que hombres. La participación de las mujeres en la iniciativa emprendedora varía de un país a otro (Hooff & Nandram, 2012). Hooff y Nandram (2012) señalan que en algunos países como Asia y Oriente Medio, la participación femenina en el emprendimiento es baja, mientras que en África y Australia la participación femenina es alta.

Este hallazgo apoya los resultados por GEM. Los datos de GEM (2010) mostraron que cuanto más alto es el nivel económico, menor es la percepción de las mujeres que buscan "emprendimiento como opción de carrera". Su aversión al riesgo es también más alta en los países más desarrollados, lo cual es probablemente la razón por la que África tiene una mayor participación de las mujeres en la iniciativa emprendedora en comparación con los países desarrollados.

Según la información mencionada anteriormente en el Departamento de Estadísticas de Malasia (2009), hasta 2008, la participación de las mujeres era inferior al 14%. Para aumentar el número de empresarios, el gobierno debería centrarse en las mujeres, ya que tienen el potencial de tener un gran impacto debido a su número en la población y su número como estudiantes en la educación terciaria. Por ejemplo, en el caso de los Estados Unidos, la contribución de las empresarias es parte del escenario de crecimiento rápido en ese país (Carter, 1997). En diciembre de 2016, había 6.3 millones de empresas registradas en Malasia, y sólo 1.18 millones estaban registradas a nombre de mujeres empresarias (Bernama, 2016).

Sobre la base de la tendencia actual y el escenario, este estudio describe la importancia de la creación de mujeres emprendedoras. En Malasia, esta es también una cuestión que requiere más atención. Para aumentar el interés de las mujeres por el espíritu emprendedor, el contenido del curso y el método de enseñanza deberían ser más favorables para las mujeres. Por ejemplo, se debe incluir orientación sobre dónde las mujeres pueden obtener financiamiento e incorporar oradoras invitadas femeninas. Una recomendación para crear un programa específico de género también ha sido propuesta por Bergman et al. (2011).

Además de las estudiantes de sexo femenino, la universidad debe considerar el enfoque en los estudiantes malayos, que es la población dominante en la universidad. El objetivo del gobierno es alcanzar un 5% de los graduados universitarios que opten por el emprendimiento. El número de graduados de UKM que se convierten en empresarios o trabajadores autónomos es, en promedio, menos de 90 estudiantes. Para poner esto en perspectiva, el número de estudiantes en UKM cada año es más de 5000. Esto indica que, en promedio, alrededor de 1,8% de los graduados de UKM participar en la creación de una empresa después de la graduación. Esta cifra sigue siendo baja en comparación con la meta gubernamental, que es del 5%.

6.3 LIMITACIONES DE LA INVESTIGACIÓN

Al igual que toda investigación, no existe tal cosa como un estudio perfecto, y este estudio enfrentó muchas limitaciones como el tiempo, las muestras y el diseño de la investigación.
En primer lugar, el estudio sólo se ocupó de la intención de los estudiantes. Sin embargo, debido a las limitaciones de tiempo, no fue posible ver si la intención se convirtió en comportamiento, que es la creación de una empresa.

En segundo lugar, el estudio tiene pocos encuestados de otras etnias, por lo que en términos de medición estadística, los datos no apoyan firmemente los resultados de otras etnias excepto los estudiantes malayos. Para el pre-curso, el número de encuestados fue de 493, pero el post-curso sólo logró obtener 149 encuestados. Aunque esto cumple el tamaño para el análisis estadístico, un desglose por etnicidad o campo de estudio mostró que ciertos grupos no cumplían con el número mínimo de 30 recomendado como tamaño muestral.

En tercer lugar, debido a las limitaciones de tiempo, no fue posible para este estudio entrar en detalles sobre la medición de las mejores características para el entrenador, el método de enseñanza o el contenido.

Cuarto, en términos de los encuestados, los resultados pueden estar sesgados porque completar el cuestionario fue voluntario. Esto podría crear sesgos si sólo ciertos grupos completaran el cuestionario. El resultado podría ser diferente si todos los estudiantes del curso estuvieran obligados a responder.

Finalmente, dado que el curso era obligatorio para todos los estudiantes, no fue posible diseñar la investigación para comparar un grupo de estudio y grupo de control. En cambio, el posible sesgo de autoselección queda evitado al tratarse de un curso obligatorio.

6.4 FUTURAS LÍNEAS DE INVESTIGACIÓN

Para mejorar y desarrollar los resultados, hay algunos estudios que se pueden hacer en el futuro:

1) Método de enseñanza

Un estudio futuro podría hacer una investigación detallada para probar el método de enseñanza y los resultados sobre la intención de los estudiantes y el desarrollo de habilidades.

2) Estudiar cómo atraer a más mujeres al emprendimiento.

Este estudio coincide con Hooff y Nadram (2012), en que un estudio futuro debería concentrarse en las habilidades y conocimientos educativos necesarios para que las mujeres se conviertan en empresarias.

3) Estudiar métodos de enseñanza específicos y sus efectos sobre el género y la etnia.

La literatura disponible muestra que hay diferentes estilos de aprendizaje entre géneros. Esto podría ser el mismo con la etnicidad, especialmente donde el uso diario de la lengua es diferente, como en el contexto de Malasia.

4) Estudiar el vínculo entre la intención y el comportamiento.

Este estudio sólo se centró en la intención emprendedora (IE). Estudios futuros deben explorar la estabilidad de la intención tal como subrayan muchos estudiosos, así como si la intención se convierte realmente en comportamiento.

CHAPTER 6: SUMMARY AND RECOMMENDATION

This chapter summarises the research. The summary of findings, limitations of the study and future research proposals are also included in this chapter.

6.1 SUMMARY OF FINDINGS

This study contributes to entrepreneurship education (EE) using the theory of planned behaviour (TPB) as a reference framework. More specifically, it measured the effectiveness of EE in Malaysia or, more specifically, in Universiti Kebangsaan Malaysia (UKM). The literature review showed a scarcity of research in this sense, and in particular, the lack of analyses using structural equation modelling (SEM), to which this study also intended to contribute.

The problems in Malaysia and UKM have been highlighted in chapter 2. To summarise, the current problems faced by the Malaysian government are the unemployed graduates and a limited number of graduates involved in business. Based on the efforts made by the government since the New Economic Policy (NEP) started in 1971, these results are devastating.

Questions have been raised about the effectiveness of entrepreneurship education in Malaysia. Many efforts to develop entrepreneurs through tertiary education began in the 1990s, but despite these efforts, less than 2% of graduates become entrepreneurs. According to statistics from the Malaysia Statistic Department (2009), although the number of graduates involved in business has increased, the percentage of the overall population is decreasing.

To address the issue of the effectiveness of EE in Malaysia, this study developed the research based on TPB since intention is the best predictor of behaviour. This theory has also been

robustly tested and used in many fields. There are also calls for standardised measurement of theory usage by scholars to evaluate EE around the world, since it varies widely.

Starting from the model, a questionnaire was developed based on an already validated entrepreneurial intention questionnaire (EIQ). The study focused on elements of EE as the intervention to evaluate the effectiveness of EE. The first element is the trainer, which could be the lecturer and/or guest speaker. The combination brings theory, practice and inspiration to the students. The second element is the teaching method and the last element is the content of the course.

The pre-course result showed that the motivational antecedent influenced the students' intention towards entrepreneurship. Perceived behavioural control (PBC) is the strongest variable and accounted for 38% of the variance in entrepreneurial intention. However, the post-course result showed that personal attitude does not significantly influence intention. PBC accounted for 48% of the variance in intention. Based on this, any intervention related to PBC will have a better chance to influence intention.

For the intervention, the study investigated whether the trainer or guest speaker had an impact on the intention. They not only convey knowledge but also influence students' intention because they serve as a role model. The students were asked to what extent the lecturer and guest speaker made them seriously consider embarking on an entrepreneurial career in the future. The results indicated that both the trainer and guest speaker moderate the relationship between attitude and intention. The trainer and guest speaker moderate the relationship between attitude and intention, perhaps because their function as role models enhances the students' interest in entrepreneurship.

The study examined whether the content and teaching method influenced the relation between motivational antecedents and intention. The result showed that the teaching method moderates the relationship between social norm and intention. The study also explores

whether there was an event or trigger in the course that attracted the students' interest in entrepreneurship.

Other findings from this study indicated that female students have lower entrepreneurial interest than male students. This finding is similar to many other studies in which the male was found to show more interest in entrepreneurship. A comparison of interest in entrepreneurship showed that the Bumiputera or Malay have higher interest than the Chinese. However, this result could be due to the much lower number of Chinese participants than Malay participants. To verify the results, another study should be done with a higher number of Chinese and respondents from other ethnicities. Comparing entrepreneurial interest among the faculties showed that the faculty of Economic and Management has the highest interest. This finding is similar to many findings by other scholars. In general, this study confirmed that EE has a positive impact on student intention and skill development.

6.2 IMPLICATION OF RESULTS AND RECOMMENDATIONS

This section is organized by separating the implications derived from each one of the EE components analysed in this doctoral dissertation.

1) The role of trainer/guest speaker

The findings indicated that the role of a trainer can influence students' intention, so the course should continue including both trainers and guest speakers. Soutaris et al. (2007) suggest that trainers at the university should be trained on how to inspire students towards entrepreneurship. In Aronsson (2004), Birch points out that entrepreneurship skills can be learned but the education system does not have the proper teachers for it. Current practice

hires lecturers based on their academic qualifications. The entrepreneurship training for CMIE 1012 was, at most, a one-week course. This is very different from teachers in primary and secondary schools, who are hired based on their academic qualifications and are given long-term training by the Ministry of Higher Education to teach in dedicated institutions. For future practice, the university should consider providing lecturers or trainers with specific training courses by the Ministry. A report by the European Commission (2004) also recommended a course for entrepreneurship teachers on 'how to motivate students and encourage entrepreneurial behavior'.

Aronsson (2004) also suggested that trainers should be people with business experience. UKM should consider allowing entrepreneurship lecturers to be involved in business or hire entrepreneurs as lecturers for this field.

2) **The role of the teaching method and content**

The findings of this study showed that female students have low entrepreneurial intention, and the impact of skills, trait and competencies' development is also low compared to male students.

All over the world the female entrepreneurs' progress is still frequently lagging behind that of males. Hooff and Nandram (2012) highlight that lower risk-taking behaviour, stereotypes of occupations, discrimination, culture and low self-confidence are some reasons there are fewer female entrepreneurs than males. Female involvement in entrepreneurship varies across countries (Hooff & Nandram, 2012). Hooff and Nandram (2012) point out that in some countries like Asia and the Middle East, female involvement in entrepreneurship is low, while in Africa and Australia female involvement is high.

This finding supports the results by GEM. Data by GEM (2010) showed that the higher the economic level, the lower the perception of females looking at 'entrepreneurship as career choice'. Their risk aversion is also higher in more developed countries, which is probably why Africa has a higher involvement of women in entrepreneurship compared to developed countries.

Based on information mentioned earlier from the Malaysia statistic department (2009), until 2008, female involvement was less than 14%. To increase the number of entrepreneurs, the government should focus on women since they have the potential to have a big impact because of their numbers in the population and their numbers as students in tertiary education. For example, looking at the United States case, female entrepreneurs' contribution is part of the rapid growth scenario in that country (Carter, 1997). As of December 2016, there were 6.3 million registered business in Malaysia, and only 1.18 million are registered to women entrepreneurs (Bernama, 2016).

Based on the current trend and scenario, this study describes the importance of creation of female entrepreneurs. In Malaysia, this is also an issue which requires more attention. To increase female interest in entrepreneurship, course content and teaching method should be more female-friendly. For example, guidance on where females can get financing and incorporating female guest speakers should be included. A recommendation to create a gender specific programme has also been proposed by Bergman et al. (2011).

In addition to female students, the university should consider focus on the Malay students, which is the dominant population at the university. The government target for development of graduate entrepreneurs out of total graduate is 5%. The number of graduates from UKM that become entrepreneurs or self-employed is, on average, fewer than 90 students. To put this in perspective, the number of students at UKM each year is more than 5000. This indicates that

on average, around 1.8% of UKM graduates become involved in business after graduation. This figure is still low compared to the government target, which is 5%.

6.3 RESEARCH LIMITATIONS

Like all research, there is no such thing as a perfect study, and this study faced many limitation such as time, samples and research design.

First, the study was only concerned with the students' intention. However, because of time limitations, it was not possible to see whether the intention became behaviour, which is starting a company.

Secondly, the study has few respondents from other ethnicities, so in terms of statistical measurement, the data do not strongly support the findings for other ethnicities except the Malay students. For the pre-course, the number of respondents was 493, but the post-course only managed to get 149 respondents. Although this meets the size for statistical analysis, a breakdown according to ethnicity or field of study showed that certain groups did not meet the minimum number of 30 recommended for sample size.

Thirdly, due to time constraints, it was not possible for this study to go into detail regarding measurement of the best characteristics for the trainer, teaching method or content.

Fourth, in terms of respondents, the results may be biased because completing the questionnaire was voluntary. This could create bias if only certain groups completed the questionnaire. The result might be different if all the students in the course were required to answer it.

Finally, since the course was compulsory for all the students, it was not possible to design the research to compare a study group and control group. In contrast, the possible self-selection bias is avoided since the course is compulsory.

6.4 FUTURE RESEARCH LINES

To improve and develop the findings, there are some studies that can be done in the future:

1) Teaching method

A future study could do detailed research to test the teaching method and the results on the students' intention and skill development.

2) Study how to attract more females to entrepreneurship.

This study agrees with Hooff and Nadram (2012), in which a future study should concentrate on the educational skills and knowledge required for women to become entrepreneurs.

3) Study specific teaching methods and their effect on gender and ethnicity.

Available literature shows there are different learning styles between genders. This could be the same with ethnicity, especially where daily language usage is different, like in the context of Malaysia.

4) Study the link between intention and behaviour.

This study only focused on entrepreneurial intention (EI). Future studies should explore the stability of intention as highlighted by many scholars and whether intention really turns into behaviour.

APPENDICES

LIST OF APPENDICES

Appendix A

Pre course questionnaire

page 1

*** 1. Please indicate your interest in entrepreneurship in general before the beginning of the course CMIE 1012. Indicate from 1 (NOT AT ALL) to 7 (TO A GREAT EXTENT).** (Select one option)

Not at all 0	1	2	3	4	5	6	To a great extent 7
○	○	○	○	○	○	○	○

2)"How do you rate yourself on the following entrepreneurial trait/ abilities/ skill sets at the beginning of the course?".Indicate from 1 (NO APTITUDE AT ALL) to 7 (VERY HIGH APTITUDE).

2. Rating

	NO APTITUDE AT ALL 1	2	3	4	5	6	VERY HIGH APTITUDE 7
*(a) Decision making (Select one option)	○	○	○	○	○	○	○
*(b) Creativity / innovative thinking (Select one option)	○	○	○	○	○	○	○
*(c) Problem solving skills (Select one option)	○	○	○	○	○	○	○
*(d) Identify and evaluate business opportunities (Select one option)	○	○	○	○	○	○	○
*(e) Presentation skills (Select one option)	○	○	○	○	○	○	○
*(f) Communication skills (Select one option)	○	○	○	○	○	○	○
*(g) Negotiation skills (Select one option)	○	○	○	○	○	○	○
*(h) Networking (Select one option)	○	○	○	○	○	○	○
*(i) Need for independent (Select one option)	○	○	○	○	○	○	○
*(j) Proactive personality (Identify opportunity and act on them) (Select one option)	○	○	○	○	○	○	○
*(k) Self-efficacy (Can organize and execute actions effectively to produce the required results) (Select one option)	○	○	○	○	○	○	○
*(l) Personal locus of control (autonomy) (Select one option)	○	○	○	○	○	○	○
*(m) Risk taking (Select one option)	○	○	○	○	○	○	○

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3)How do you rate yourself on the following generic skills at the beginning of the course?. Indicate from 1 (NOT AT ALL) to 7 (VERY HIGH SKILL).

3. Rating

	Lowest 1	2	3	4	5	6	Highest 7
*(a) Basic /fundamental skills – using numbers and technology (Select one option)	◯	◯	◯	◯	◯	◯	◯
*(b) People related skills (Select one option)	◯	◯	◯	◯	◯	◯	◯
*(c) Personal skills and attributes (Select one option)	◯	◯	◯	◯	◯	◯	◯
*(d) Conceptual thinking skills- collecting and organizing information (Select one option)	◯	◯	◯	◯	◯	◯	◯
*(e) Skills related to the business world-enterprise skills ,innovation skills (Select one option)	◯	◯	◯	◯	◯	◯	◯

*** 4. Do you personally know any entrepreneur(family ,friend,ex bos etc)?** (Select one option)

◯ Yes (Proceed to next question)

◯ No (GO TO THE NEXT PAGE)

5)"If you do, indicate your relationship with them, and value the following questions from 1 (TO NO EXTENT) to 7 (COMPLETELY). (PLEASE ANSWER THE STATEMENT THAT ARE ONLY RELATED TO YOU) ."

5. Rating

	Lowest 1	2	3	4	5	6	Highest 7	N/A
(a) To what extent do you know his /her activity(FAMILY) as an entrepreneur (Select one option)	◯	◯	◯	◯	◯	◯	◯	◯
(b) To what extent may he/ she (FAMILY) be considered a good entrepreneur (Select one option)	◯	◯	◯	◯	◯	◯	◯	◯
(c) what extent do you know his /her activity(FRIEND) as an entrepreneur (Select one option)	◯	◯	◯	◯	◯	◯	◯	◯
(d) To what extent may he/ she (FRIEND) be considered a good entrepreneur (Select one option)	◯	◯	◯	◯	◯	◯	◯	◯
(e) To what extent do you know his /her (BOS /FOREMAN) activity as an entrepreneur (Select one option)	◯	◯	◯	◯	◯	◯	◯	◯
(f) To what extent may he/ she (BOS /FOREMAN) be considered a good entrepreneur (Select one option)	◯	◯	◯	◯	◯	◯	◯	◯
(g) To what extent do you know his /her (OTHERS) activity as an entrepreneur (Select one option)	◯	◯	◯	◯	◯	◯	◯	◯
(h) To what extent may he/ she(OTHERS) be considered a good entrepreneur (Select one option)	◯	◯	◯	◯	◯	◯	◯	◯

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6) "For you, starting a new business (being an entrepreneur) would involve...Indicate them form 1 (TOTALLY UNLIKELY) to 7 (TOTALLY LIKELY AGREEMENT)."

6. Rating

	Lowest 1	2	3	4	5	6	Highest 7
*(a) Facing new challenges (Select one option)	◯	◯	◯	◯	◯	◯	◯
*(b) Creating jobs for others (Select one option)	◯	◯	◯	◯	◯	◯	◯
*(c) Being creative and innovative (Select one option)	◯	◯	◯	◯	◯	◯	◯
*(d) Having a high income (Select one option)	◯	◯	◯	◯	◯	◯	◯
*(e) Taking calculated risks (Select one option)	◯	◯	◯	◯	◯	◯	◯
*(f) Being my own boss (independence) (Select one option)	◯	◯	◯	◯	◯	◯	◯

7)"Now please state to what extent these are desirable for you generally in your life...Indicate from 1 (NOT DESIRABLE AT ALL) to 7 (TOTALLY DESIRABLE)".

7. Rating

	NOT DESIRABLE AT ALL 1	2	3	4	5	6	TOTALLY DESIRABLE 7
*(a) Facing new challenges (Select one option)	◯	◯	◯	◯	◯	◯	◯
*(b) Creating jobs for others (Select one option)	◯	◯	◯	◯	◯	◯	◯
*(c) Being creative and innovative (Select one option)	◯	◯	◯	◯	◯	◯	◯
*(d) Having a high income (Select one option)	◯	◯	◯	◯	◯	◯	◯
*(e) Taking calculated risks (Select one option)	◯	◯	◯	◯	◯	◯	◯
*(f) Being my own boss (independence) (Select one option)	◯	◯	◯	◯	◯	◯	◯

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8)Please indicate to what extent you would be able to effectively perform the following tasks : Value them from 1 (TOTALLY INEFFECTIVELY) to 7 (FULLY EFFECTIVELY).

8. Rating

	TOTALLY INEFFECTIVELY 1	2	3	4	5	6	FULLY EFFECTIVELY 7
*(a) Defining my business idea and a new business strategy (Select one option)	○	○	○	○	○	○	○
*(b) Keeping the new venture creation process under control (Select one option)	○	○	○	○	○	○	○
*(c) Negotiating and maintaining favourable relationships with potential investors and banks (Select one option)	○	○	○	○	○	○	○
*(d) Recognizing opportunities in the market for new products and/or services (Select one option)	○	○	○	○	○	○	○
*(e) Interacting with key people to raise capital to create a new venture (Select one option)	○	○	○	○	○	○	○
*(f) Creating and putting a new venture into operation (Select one option)	○	○	○	○	○	○	○

9)"Please , think now about your family and closer friends. To what extent would they agree if you decided to become an entrepreneur and start your own business?. Indicate from 1 (TOTALLY DISAGREE) to 7 (TOTALLY AGREE) ."

9. Rating

	Totally Disagree 1	2	3	4	5	6	Totally Agree 7
*(a) My immediate family (Parents and siblings) (Select one option)	○	○	○	○	○	○	○
*(b) My close friends (Select one option)	○	○	○	○	○	○	○
*(c) My colleagues or mates (Select one option)	○	○	○	○	○	○	○

"....and how do you value the opinion of these people in this regard? I think it is ...Indicate from 1 (NOT IMPORTANT AT ALL) to 7 (VERY IMPORTANT)."

10. RATING

	NOT IMPORTANT AT ALL 1	2	3	4	5	6	VERY IMPORTANT 7
*(a) My immediate family (Parents and siblings) (Select one option)	○	○	○	○	○	○	○
*(b) My close friends (Select one option)	○	○	○	○	○	○	○
*(c) My colleagues or mates (Select one option)	○	○	○	○	○	○	○

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11)Please, state your level of intention with respect to the following statements:

11. Rating	LOWEST 1	2	3	4	5	6	HIGHEST 7
*(a) It is very likely that I will start a venture someday (Select one option)	◯	◯	◯	◯	◯	◯	◯
*(b) I am willing to make any effort to become an entrepreneur (Select one option)	◯	◯	◯	◯	◯	◯	◯
*(c) I have serious doubts whether I will ever start a venture (Select one option)	◯	◯	◯	◯	◯	◯	◯
*(d) I am determined to start a business in the future (Select one option)	◯	◯	◯	◯	◯	◯	◯
*(e) My professional goal is to be an entrepreneur (Select one option)	◯	◯	◯	◯	◯	◯	◯

12)Mark on a 1-7 scale your intention to pursue one of the following career paths. Indicate from 1 (NOT INTERESTED AT ALL) to 7 (VERY INTERESTED).

12. Rating	NOT INTERESTED AT ALL 1	2	3	4	5	6	VERY INTERESTED 7
*(a) Create your own business (being an entrepreneur) (Select one option)	◯	◯	◯	◯	◯	◯	◯
*(b) Develop your career in a private company (Select one option)	◯	◯	◯	◯	◯	◯	◯
*(c) Work in the public sector (being a civil servant) (Select one option)	◯	◯	◯	◯	◯	◯	◯
*(d) Collaborate in a non-profit organization (NGO) (Select one option)	◯	◯	◯	◯	◯	◯	◯

*** 13. Do you currently feel that you have a good idea to launch as a business?** (Select one option)

◯ Yes

◯ No

*** 14. What do you thinks are the barriers for you from starting your own business now?. (You may select more than once).**

- ☐ Lack of knowledge/experience
- ☐ Lack of capabilities
- ☐ Lack of entrepreneurial characteristics
- ☐ Lack of entrepreneurial motivation
- ☐ Lack of financial source
- ☐ Other (please specify) _____

*** 15. If you finally decided to create your own business, you would mainly do so due to.....** (Select one option)

Lack of a better alternative employment						Taking advantage of a business opportunity
1	2	3	4	5	6	7
○	○	○	○	○	○	○

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*** 16. Age (Umur)** (Enter a value between 18 and 40)

_____

_____

*** 17. Gender** (Select one option)

- ○ Male
- ○ Female

*** 18. Race** (Select one option)

- ○ Malay
- ○ Chinese
- ○ Indian
- ○ Others

*** 19. State of birth (Negeri kelahiran)** (Select one option)

- ○ Kedah
- ○ Perlis
- ○ Pulau Pinang
- ○ Perak
- ○ Selangor
- ○ Negeri Sembilan
- ○ Melaka
- ○ Johor
- ○ Pahang
- ○ Terengganu
- ○ Kelantan
- ○ Sabah
- ○ Sarawak
- ○ Other (please specify) _____

*** 20. Position in the family** (Select one option)

- ○ Eldest
- ○ Middle
- ○ Youngest
- ○ Only child
- ○ Other

*** 21. What is your field?** (Select one option)

- ○ Dentistry
- ○ Economic and Management
- ○ Engineering and Build Environment
- ○ Education
- ○ Health Sciences
- ○ Information Science and Technology
- ○ Islamic Studies
- ○ Law
- ○ Medicine
- ○ Pharmacy
- ○ Science and Technology
- ○ Social Science and Humanities

*** 22. Do you have work experience** (Select one option)

- ○ Yes
- ○ No

*** 23. Do you have experience involved in business?** (Select one option)

- ○ Yes
- ○ No

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*** 24. What level of studies did your father reached?** (Select one option)

- ○ Primary
- ○ Secondary
- ○ Vocational training
- ○ University
- ○ Other

*** 25. What level of studies did your mother reached?** (Select one option)

- ○ Primary
- ○ Secondary
- ○ Vocational training
- ○ University
- ○ Other

*** 26. What is your father's present occupations?** (Select one option)

- ○ Private sector employee
- ○ Public sector employee
- ○ Self employed or entrepreneur
- ○ Retired/ Unemployed
- ○ Other

*** 27. What is your mother's present occupations?** (Select one option)

- ○ Private sector employee
- ○ Public sector employee
- ○ Self employed or entrepreneur
- ○ Retired/ Unemployed
- ○ Other

Post course questionnaire

*** 1. Please indicate your interest toward the entrepreneurship at the end of the course CMIE 1012 . Indicate from 1 (NOT AT ALL) to 7 (TO A GREAT EXTENT).** (Select one option)

Not at all 0	1	2	3	4	5	6	To a great extent 7
○	○	○	○	○	○	○	○

2. What is the structure of the class?. (tick more than 1 if needed)

- ☐ Lecture
- ☐ Business plan component
- ☐ Interaction with practitioner and networking events (speeach by entrepreneurs/practical)
- ☐ University support component (venture capital,market info& research,pool of technology)
- ☐ Case study / PBL
- ☐ E-learning / Business simulation
- ☐ Other (please specify) _____

3. Does the class follow the syllabuses that have been handed out to students? (Select one option)

- ○ Yes
- ○ No

"How do you rate yourself on the following entrepreneurial trait/ abilities/ skill sets after taking the CMIE1012 course?".Indicate from 1 (NO APTITUDE AT ALL) to 7 (VERY HIGH APTITUDE).

4. Rating

	NO APTITUDE AT ALL 1	2	3	4	5	6	VERY HIGH APTITUDE 7
*(a) Decision making (Select one option)	○	○	○	○	○	○	○
*(b) Creativity / innovative thinking (Select one option)	○	○	○	○	○	○	○
*(c) Problem solving skills (Select one option)	○	○	○	○	○	○	○
*(d) Identify business opportunities (Select one option)	○	○	○	○	○	○	○
*(e) Evaluating business opportunities (Select one option)	○	○	○	○	○	○	○
*(f) Communication skills (Select one option)	○	○	○	○	○	○	○
*(g) Negotiation skills (Select one option)	○	○	○	○	○	○	○
*(h) Networking (Select one option)	○	○	○	○	○	○	○
*(i) Need for independent (Select one option)	○	○	○	○	○	○	○
*(j) Proactive personality (Identify opportunity and act on them) (Select one option)	○	○	○	○	○	○	○
*(k) Self-efficacy (Can organize and execute actions effectively to produce the required results) (Select one option)	○	○	○	○	○	○	○
*(l) Personal locus of control (autonomy) (Select one option)	○	○	○	○	○	○	○
*(m) Risk taking (Select one option)	○	○	○	○	○	○	○
(n) Teamwork (Select one option)	○	○	○	○	○	○	○
(o) Development of new product and service (innovator) (Select one option)	○	○	○	○	○	○	○
(p) Leadership (Select one option)	○	○	○	○	○	○	○

How do you rate yourself on the following generic skills at the end of the course?. Indicate from 1 (NOT AT ALL) to 7 (VERY HIGH SKILL).

5. Rating

	Lowest 1	2	3	4	5	6	Highest 7
*(a) Basic /fundamental skills – using numbers and technology (Select one option)	○	○	○	○	○	○	○
*(b) People related skills (Select one option)	○	○	○	○	○	○	○
*(c) Personal skills and attributes (Select one option)	○	○	○	○	○	○	○
*(d) Conceptual thinking skills- collecting and organizing information (Select one option)	○	○	○	○	○	○	○
*(e) Skills related to the business world-enterprise skills ,innovation skills (Select one option)	○	○	○	○	○	○	○

To what extent the entrepreneurship course CMIE 1012 that you have taken helped develop any of those aspects?.Indicate from 1(TO NO EXTENT) to 7 (TO A GREAT EXTENT)

6. Rating

	To no extent 1	2	3	4	5	6	to a great extent 7	N/A
(a) Knowledge about the entrepreneurial environment (Select one option)	○	○	○	○	○	○	○	○
(b) Greater recognition of the entrepreneur's figure (Select one option)	○	○	○	○	○	○	○	○
(c) The preference to be an entrepreneur (Select one option)	○	○	○	○	○	○	○	○
(d) The necessary abilities to be an entrepreneur (Select one option)	○	○	○	○	○	○	○	○
(e) The intention to be an entrepreneur (Select one option)	○	○	○	○	○	○	○	○

"If you do, indicate your relationship with them, and value the following questions from 1 (TO NO EXTENT) to 7 (COMPLETELY). (PLEASE ANSWER THE STATEMENT THAT ARE ONLY RELATED TO YOU) ."

8. Rating

	Lowest 1	2	3	4	5	6	Highest 7	N/A
(a) To what extent do you know his /her activity(FAMILY) as an entrepreneur (Select one option)	○	○	○	○	○	○	○	○
(b) To what extent may he/ she (FAMILY) be considered a good entrepreneur (Select one option)	○	○	○	○	○	○	○	○
(c) what extent do you know his /her activity(FRIEND) as an entrepreneur (Select one option)	○	○	○	○	○	○	○	○
(d) To what extent may he/ she (FRIEND) be considered a good entrepreneur (Select one option)	○	○	○	○	○	○	○	○
(e) To what extent do you know his /her (BOS /FOREMAN) activity as an entrepreneur (Select one option)	○	○	○	○	○	○	○	○
(f) To what extent may he/ she (BOS /FOREMAN) be considered a good entrepreneur (Select one option)	○	○	○	○	○	○	○	○
(g) To what extent do you know his /her (OTHERS) activity as an entrepreneur (Select one option)	○	○	○	○	○	○	○	○
(h) To what extent may he/ she(OTHERS) be considered a	○	○	○	○	○	○	○	○

"For you, starting a new business (being an entrepreneur) would involve...Indicate them form 1 (TOTALLY UNLIKELY) to 7 (TOTALLY LIKELY AGREEMENT)."

9. Rating

	Lowest 1	2	3	4	5	6	Highest 7
*(a) Facing new challenges (Select one option)	○	○	○	○	○	○	○
*(b) Creating jobs for others (Select one option)	○	○	○	○	○	○	○
*(c) Being creative and innovative (Select one option)	○	○	○	○	○	○	○
*(d) Having a high income (Select one option)	○	○	○	○	○	○	○
*(e) Taking calculated risks (Select one option)	○	○	○	○	○	○	○
*(f) Being my own boss (independence) (Select one option)	○	○	○	○	○	○	○

7)"Now please state to what extent these are desirable for you generally in your life...Indicate from 1 (NOT DESIRABLE AT ALL) to 7 (TOTALLY DESIRABLE)".

10. Rating

	NOT DESIRABLE AT ALL 1	2	3	4	5	6	TOTALLY DESIRABLE 7
*(a) Facing new challenges (Select one option)	○	○	○	○	○	○	○
*(b) Creating jobs for others (Select one option)	○	○	○	○	○	○	○
*(c) Being creative and innovative (Select one option)	○	○	○	○	○	○	○
*(d) Having a high income (Select one option)	○	○	○	○	○	○	○
*(e) Taking calculated risks (Select one option)	○	○	○	○	○	○	○
*(f) Being my own boss (independence) (Select one option)	○	○	○	○	○	○	○

Please indicate to what extent you would be able to effectively perform the following tasks : Value them from 1 (TOTALLY INEFFECTIVELY) to 7 (FULLY EFFECTIVELY).

11. Rating

	TOTALLY INEFFECTIVELY 1	2	3	4	5	6	FULLY EFFECTIVELY 7
*(a) Defining my business idea and a new business strategy (Select one option)	○	○	○	○	○	○	○
*(b) Keeping the new venture creation process under control (Select one option)	○	○	○	○	○	○	○
*(c) Negotiating and maintaining favourable relationships with potential investors and banks (Select one option)	○	○	○	○	○	○	○
*(d) Recognizing opportunities in the market for new products and/or services (Select one option)	○	○	○	○	○	○	○
*(e) Interacting with key people to raise capital to create a new venture (Select one option)	○	○	○	○	○	○	○
*(f) Creating and putting a new venture into operation (Select one option)	○	○	○	○	○	○	○

"Please , think now about your family and closer friends. To what extent would they agree if you decided to become an entrepreneur and start your own business?. Indicate from 1 (TOTALLY DISAGREE) to 7 (TOTALLY AGREE) ."

12. Rating

	Totally Disagree 1	2	3	4	5	6	Totally Agree 7
*(a) My immediate family (Parents and siblings) (Select one option)	○	○	○	○	○	○	○
*(b) My close friends (Select one option)	○	○	○	○	○	○	○
*(c) My colleagues or mates (Select one option)	○	○	○	○	○	○	○

"....and how do you value the opinion of these people in this regard? I think it is ...Indicate from 1 (NOT IMPORTANT AT ALL) to 7 (VERY IMPORTANT)."

13. RATING

	NOT IMPORTANT AT ALL 1	2	3	4	5	6	VERY IMPORTANT 7
*(a) My immediate family (Parents and siblings) (Select one option)	○	○	○	○	○	○	○
*(b) My close friends (Select one option)	○	○	○	○	○	○	○
*(c) My colleagues or mates (Select one option)	○	○	○	○	○	○	○

Please, state your level of intention with respect to the following statements:

14. Rating

	LOWEST 1	2	3	4	5	6	HIGHEST 7
*(a) It is very likely that I will start a venture someday (Select one option)	○	○	○	○	○	○	○
*(b) I am willing to make any effort to become an entrepreneur (Select one option)	○	○	○	○	○	○	○
*(c) I have serious doubts whether I will ever start a venture (Select one option)	○	○	○	○	○	○	○
*(d) I am determined to start a business in the future (Select one option)	○	○	○	○	○	○	○
*(e) My professional goal is to be an entrepreneur (Select one option)	○	○	○	○	○	○	○

To what extent did the entrepreneurship programme CMIE 1012 help you to .....Indicate from 1 (NOT AT ALL) to 7 (TO A GREAT EXTENT)

15. Rating

	Not at all 1	2	3	4	5	6	To a great extent 7	N/A
*(a) Increase your understanding of the attitudes, values and motivation of entrepreneurs(i.e why do entrepreneur act?) (Select one option)	○	○	○	○	○	○	○	○
*(b) Increase your understanding of the actions someone has to take in order to start a business (i.e what need to be done?) (Select one option)	○	○	○	○	○	○	○	○
*(c) Enhance your practical management skills in order to start a business (i.e how do I start the business?) (Select one option)	○	○	○	○	○	○	○	○
*(d) Enhance your ability to develop networks (i.e who do I need to know?) (Select one option)	○	○	○	○	○	○	○	○
*(e) Enhance your ability to identify an opportunity(i.e when do I need to act?) (Select one option)	○	○	○	○	○	○	○	○

*** 16. Do you remember ANY PARTICULAR EVENT or INPUT during the entrepreneurship course that change drastically your heart and mind and made you to consider becoming an entrepreneur?** (Select one option)

- ○ Yes (PROCEED to the next question)
- ○ No (SKIP the next question)

17. If you answer "YES" what is that particular event or input?

_____

_____

To what extent did the following events made you to seriously consider embarking on an entrepreneurial career in the future?

18. Rating

	Not at all 1	2	3	4	5	6	To a great extent 7	N/A
*(a) Content of the course (Select one option)	○	○	○	○	○	○	○	○
*(b) Teaching pedagogy of the course (Select one option)	○	○	○	○	○	○	○	○
*(c) The views of the lecturer (Select one option)	○	○	○	○	○	○	○	○
*(d) The views of an external speaker (Public lecture) (Select one option)	○	○	○	○	○	○	○	○
*(e) The views of classmate(s) (Select one option)	○	○	○	○	○	○	○	○
*(f) The preparation for abusiness plan competition and the view of the judges of the competition (Select one option)	○	○	○	○	○	○	○	○
*(g) Other (as listed by you on the previous question) (Select one option)	○	○	○	○	○	○	○	○

Please indicate the extent to which you were involved in the following item related to entrepreneurship activities .Indicate 1 (MINIMAL UTILIZATION) to 7 (EXTENSIVE UTILIZATION)

19. Rating

	Minimal utilization 1	2	3	4	5	6	Extensive utilization 7	N/A
*(a) A pool of entrepreneurial -minded classmates for building a team (Select one option)	○	○	○	○	○	○	○	○
*(b) A pool of university technology (Select one option)	○	○	○	○	○	○	○	○
*(c) Advice from lecturers (Select one option)	○	○	○	○	○	○	○	○
*(d) Advice from classmates (Select one option)	○	○	○	○	○	○	○	○
*(e) Research resources (library/web) (Select one option)	○	○	○	○	○	○	○	○
*(f) Networking events (Select one option)	○	○	○	○	○	○	○	○
*(g) Physical space in the university for meetings/selling product (Select one option)	○	○	○	○	○	○	○	○
*(h) Participation in business plan competition (Select one option)	○	○	○	○	○	○	○	○
*(i) Request for funding from university (Select one option)	○	○	○	○	○	○	○	○

Mark on a 1-7 scale your intention to pursue one of the following career paths. Indicate from 1 (NOT INTERESTED AT ALL) to 7 (VERY INTERESTED).

20. Rating

	NOT INTERESTED AT ALL 1	2	3	4	5	6	VERY INTERESTED 7
*(a) Create your own business (being an entrepreneur) (Select one option)	○	○	○	○	○	○	○
*(b) Develop your career in a private company (Select one option)	○	○	○	○	○	○	○
*(c) Work in the public sector (being a civil servant) (Select one option)	○	○	○	○	○	○	○
*(d) Collaborate in a non-profit organization (NGO) (Select one option)	○	○	○	○	○	○	○

*** 21. Do you currently feel that you have a good idea to launch as a business? (Select one option)**

- ○ Yes
- ○ No

*** 22. What do you thinks are the barriers for you from starting your own business now?. (You may select more than once).**

- ☐ Lack of knowledge/experience
- ☐ Lack of capabilities
- ☐ Lack of entrepreneurial characteristics
- ☐ Lack of entrepreneurial motivation
- ☐ Lack of financial source
- ☐ Other (please specify) _____

*** 23. Does the course and support during th ecourse CMIE 1012 provide enough opportunity for you to start a business?** (Select one option)

- ○ Yes (SKIP NEXT QUESTION)
- ○ No (Proceed to next question)

24. Why do you answer "NO " for the previous question?

- ☐ Not enough technical support
- ☐ No financial support
- ☐ Not enough attraction to start a business
- ☐ Not enough skill develop during the course
- ☐ Not enough knowledge
- ☐ Not enough role model that attract me to this behavior
- ☐ Not enough time since have commitment with other studies
- ☐ Other (please specify) _____

*** 25. If you finally decided to create your own business, you would mainly do so due to.....** (Select one option)

Lack of a better alternative employment						Taking advantage of a business opportunity
1	2	3	4	5	6	7
○	○	○	○	○	○	○

Please rate the level of satisfaction regarding the effect of that course.Indicate from 1 (NOT AT ALL) to 7 (TO A GREAT EXTENT).

26. Rating

	Not at all 1	2	3	4	5	6	To a great extent 7
*(a) Entrepreneurship knowledge that you have gained (Select one option)	○	○	○	○	○	○	○
*(b) Entrepreneurial skill/competencies develop during that course (Select one option)	○	○	○	○	○	○	○
*(c) Lecturer teaching skill toward making the course attractive to you (Select one option)	○	○	○	○	○	○	○
*(d) Help you realize your potential (Select one option)	○	○	○	○	○	○	○
*(e) Help you decide your future career (Select one option)	○	○	○	○	○	○	○

*** 27. Are you planning to enroll the Junior Start Up course in the future?** (Select one option)

- ○ Yes
- ○ No

*** 28. Please state the reason why you answer "YES" or "NO" to previous question.(You can write in English or Bahasa)**

_____
_____

*** 30. Gender** (Select one option)

- ○ Male
- ○ Female

*** 31. Race** (Select one option)

- ○ Malay
- ○ Chinese
- ○ Indian
- ○ Others

*** 32. State of birth (Negeri kelahiran)** (Select one option)

- ○ Kedah
- ○ Perlis
- ○ Pulau Pinang
- ○ Perak
- ○ Selangor
- ○ Negeri Sembilan
- ○ Melaka
- ○ Johor
- ○ Pahang
- ○ Terengganu
- ○ Kelantan
- ○ Sabah
- ○ Sarawak
- ○ Other (please specify) _____

*** 33. Position in the family** (Select one option)

- ○ Eldest
- ○ Middle
- ○ Youngest
- ○ Only child
- ○ Other

*** 34. What is your field?** (Select one option)

- ○ Dentistry
- ○ Economic and Management
- ○ Engineering and Build Environment
- ○ Education
- ○ Health Sciences
- ○ Information Science and Technology
- ○ Islamic Studies
- ○ Law
- ○ Medicine
- ○ Pharmacy
- ○ Science and Technology
- ○ Social Science and Humanities

*** 35. Do you have work experience?** (Select one option)

- ○ Yes
- ○ No

36. Do you have experience involved in business? (Select one option)

- ○ Yes
- ○ No

*** 37. What level of studies did your father reached?** (Select one option)

- ○ Primary
- ○ Secondary
- ○ Vocational training
- ○ University
- ○ Other

*** 38. What level of studies did your mother reached?** (Select one option)

- ○ Primary
- ○ Secondary
- ○ Vocational training
- ○ University
- ○ Other

*** 39. What is your father's present occupations?** (Select one option)

- ○ Private sector employee
- ○ Public sector employee
- ○ Self employed or entrepreneur
- ○ Retired/ Unemployed
- ○ Other

*** 40. What is your mother's present occupations?** (Select one option)

- ○ Private sector employee
- ○ Public sector employee
- ○ Self employed or entrepreneur
- ○ Retired/ Unemployed
- ○ Other

***Required information in order to proceed to next question**

Appendix B

UNIVERSITI KEBANGSAAN MALAYSIA

	PUSAT PEMBANGUNAN KEUSAHAWANAN DAN PEMBANGUNAN EKS (UKM-CESMED)
	PRO-FORMA KURSUS PRASISWAZAH SEMESTER II 2012/2013

Peringatan: Kandungan Pro-Forma ini **TIDAK BOLEH** diubah tanpa kelulusan Senat.
Perubahan minor yang melibatkan pindaan tidak melebihi 40% boleh diluluskan di peringkat PTJ.

Program Pengajian:	**SARJANA MUDA**
Kod Kursus: **Tajuk Kursus:** **Jam Kredit:**	**CMIE 1012** **ASAS KEUSAHAWANAN DAN INOVASI**
Prasyarat/Keperluan Minimum Kursus:	**TIADA**
Hasil Pembelajaran:	Setelah mengikuti kursus ini, pelajar berkeupayaan: ◆ Memahami konsep-konsep asas dalam keusahawanan ◆Menjelaskan perkaitan antara pelbagai komponen yang diperlukan dalam keusahawan ◆ Mengaplikasikan pengetahuan keusahawanan melalui simulasi perniagaansecara atas talian ◆Menginterpretasi output simulasi perniagaan secara bermakna ◆Membuat pembentangan secara lisan untuk meyakinkan pelabur membuat pelaburan perniagaan.
Sinopsis Kandungan Kursus:	Kursus ini bertujuan untuk memperkenalkan bidang keusahawanan kepada semua pelajar UKM. Objektif utama adalah untuk memberi ilmu asas keusahawanan kepada pelajar, serta menimbulkan minat kepada warga pelajar UKM menceburi bidang keusahawanan sebagai salah satupilihan kerjaya yang patut diberi perhatian. Konsep dan teori keusahawanan meliputi pembinaan pasukan (*teaming*) dan kepimpinan, strategi dan pengurusan, pemasaran dan kajian pasaran, kewangan, pembuatan/penghasilan serta kemahiran pembentangan lisan akan diajar melalui modul secara atas talian. Kaitan antara pelbagai komponen perniagaan yang diajar digarap melalui simulasi perniagaan yang akan dijalankan oleh pelajar, secara individu dan juga berkumpulan. Siri seminar berkala dan/atau '*live*' video yang melibatkanusahawan berjaya dari dalam dan luar negara akan diadakan bertujuan untuk memberi inspirasi kepada pelajar dalam bidang keusahawanan. Sepanjang kursus ini,

	penekanan adalah terhadap pembelajaran melalui pengalaman melakukannya.

UNIVERSITI KEBANGSAAN MALAYSIA

	PUSAT PEMBANGUNAN KEUSAHAWANAN DAN PEMBANGUNAN EKS (UKM-CESMED)
	PRO-FORMA KURSUS PRASISWAZAH SEMESTER II 2012/2013

Peringatan: Kandungan Pro-Forma ini **TIDAK BOLEH** diubah tanpa kelulusan Senat.
Perubahan minor yang melibatkan pindaan tidak melebihi 40% boleh diluluskan di peringkat PTJ.

Kaedah Penilaian:	Komponen penilaian adalah seperti berikut: 1. Kuiz Modul secara atas talian (7 kuiz x 5%) - 35% 2. Pembentangan Lisan (2 kali) - 35% 3. Simulasi Perniagaan secara atas talian - 30%
Rujukan Utama: **References:**	◆Bessant, J & Tidd, J . 2011. Innovation and Entrepreneurship. 2nd Edition. John Wiley & Sons, UK ◆Bters, T.H., Dorf, R.C., and Nelson, A.J., 2011. Technology Ventures: From Idea to Enterprise. Third Edition, McGraw-Hill International ◆ Kawasaki, G. 2004. The Art of the Start. Portfolio Publishing • Kuratko, D. F. 2009. Introduction to Entrepreneurship, 8th Edition, South-Western Cengage Learning. ◆ Rosli Mahmood, Et. al. 2011. Prinsip-prinsip Keusahawanan: Pendekatan Gunaan. Edisi Kedua, Cengage Learning
Bahan Pengajaran/Peralatan:	1. Power point , Visualizer, LCD, Komputer, bahan edaran, bahan atas talian, simulasi berkomputer
Kaedah Pengajaran dan Pembelajaran:	◆ Pembelajaran Modul secara atas talian *(7 Modul, setiap satu antara 60-120 minit)* ◆Perbincangan /Tutoran*(2 jam bermula pada minggu kedua)* ◆Simulasi berkomputer secara individu dan berkumpulan
Pensyarah: **Bilik: Tel/E-mail:**	◆ PM Dr. Fariza Md Sham*(Penyelaras):* farisham@ukm.my ◆ Prof. Salmijah Surif: salmij@ukm.my ◆PM Dr Tih Sio Hong: sh@ukm.my ◆ PM Dr Aini Aman:aini@ukm.my ◆Dr. Nazrul Anuar Nayan: naz@eng.ukm.my • Prof. Dr Nor Aishah Buang norais@pkrisc.cc.ukm.my
Hari/Masa/Tempat Kuliah:	Akan ditentukan
Tarikh-Tarikh Penting:	Akan ditentukan

UNIVERSITI KEBANGSAAN MALAYSIA

	PRO-FORMA KURSUS PRASISWAZAH **SEMESTER II 2012/2013**
	MATRIK HASIL PEMBELAJARAN: ENTP1012

Peringatan: Kandungan Pro-Forma ini **TIDAK BOLEH** diubah tanpa kelulusan Senat.
Perubahan minor yang melibatkan pindaan tidak melebihi 40% boleh diluluskan di peringkat PTJ.

Bil	Hasil Pembelajaran Kursus (HPK)	Taks Bloom	Hubungan dengan Hasilan Pembelajaran Program (HPP)								Kaedah Penyampaian	Penilaian
			HPP_1	HPP_2	HPP_3	HPP_4	HPP_5	HPP_6	HPP_7	HPP_8		
1.	Memahami konsep-konsep asas dalam keusahawanan	K C	2	2	1	1	1	1	1	2	Kuliah interaktif, SPIN, Perbincangan kumpulan	Kuiz atas talian Tugasan Individu
2.	Menjelaskan perkaitan antara pelbagai komponen yang diperlukan dalam keusahawan	K C APP	2	2	1	1	1	1	1	2	Kuliah interaktif, SPIN, Perbincangan kumpulan	Kuiz atas talian dan Tugasan Simulasi Individu dan Berkumpulan
3.	Mengaplikasikan pengetahuan keusahawanan melalui simulasi perniagaansecara atas talian	K C APP	2	2	1	1	1	1	1	2	Kuliah interaktif, SPIN, Perbincangan kumpulan	Tugasan Simulasi Individu dan Berkumpulan Pembentangan Lisan
4.	Menginterprestasi output simulasi perniagaan secara bermakna	ANY SYN	2	2	1	1	1	1	1	2	Kuliah interaktif, SPIN, Perbincangan kumpulan	Tugasan Simulasi Individu dan berkumpulan Pembentangan Lisan
5.	Membuat pembentangan secara lisan kepada pelabur	APP EVA	2	2	1	1	1	1	1	2	Kuliah interaktif, SPIN, Perbincangan kumpulan	Tugasan Berkumpulan Pembentangan Lisan

Kata Kunci Hasil Pembelajaran Program

HPP_1	Memperolehi pengetahuan asas dan terkini dan memahami konsep-konsep yang dipelajari dan mengembangkan atau mengaplikasikan idea-idea tersebut dalam bidang yang dikaji	HPP_5	Menyebarkan ilmu secara rasional dan bermakna kepada ahli-ahli dalam bidang dan masyarakat
HPP_2	Menggunakan pengetahuan dan kemahiran yang diperolehi untuk menyelesaikan masalah yang berkaitan dengan bidang pengajian dalam konteks baru dan multidisiplin	HPP_6	Mengamalkan kemahiran belajar untuk pembelajaran sepanjang hayat
HPP_3	Menguruskan maklumat, menjana pengetahuan dan melakukan inovasi	HPP_7	Memimpin dan bekerja dalam satu pasukan
HPP_4	Menilai dan membuat keputusan secara sistematik berdasarkan maklumat dan secara bertanggungjawab dari segi sosial dan etika	HPP_8	Mempunyai kemahiran pengurusan dan kecenderungan keusahawanan

1	Penyumbang kecil kepada hasilan pembelajaran dan tidak diukur	2	Penyumbang utama kepada hasilan pembelajaran dan diukur

PETUNJUK TAKSONOMI BLOOM

K	**KNOWLEDGE (PENGETAHUAN)**	**ANY**	**(ANALISIS)**
C	**COMPREHENSION (KEFAHAMAN)**	**SYN**	**(SINTESIS)**
APP	**APPLICATION (APLIKASI)**	**EVA**	**(PENILAIAN)**

Appendix C

Race * Gender Crosstabulation

Count

		Gender		
		Male	Female	Total
Race	Malay	83	275	358
	Chinese	26	52	78
	Indian	10	17	27
	Other	7	23	30
Total		126	367	493

Race

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Malay	358	72.6	72.6	72.6
	Chinese	78	15.8	15.8	88.4
	Indian	27	5.5	5.5	93.9
	Other	30	6.1	6.1	100.0
	Total	493	100.0	100.0	

Race

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Malay	102	68.5	68.5	68.5
	Chinese	34	22.8	22.8	91.3
	Indian	7	4.7	4.7	96.0
	Other	6	4.0	4.0	100.0
	Total	149	100.0	100.0	

Faculty(pre course)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dentistry	10	2.0	2.0	2.0
	Economic and Management	93	18.9	18.9	20.9
	Engineering and build environment	62	12.6	12.6	33.5
	Education	10	2.0	2.0	35.5
	Health sciences	68	13.8	13.8	49.3
	Information science and technology	2	.4	.4	49.7
	Islamic studies	23	4.7	4.7	54.4
	Law	9	1.8	1.8	56.2
	Medicine	31	6.3	6.3	62.5
	Pharmacy	24	4.9	4.9	67.3
	Science and Technology	101	20.5	20.5	87.8
	Social science and humanities	60	12.2	12.2	100.0
	Total	493	100.0	100.0	

Faculty (post course)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	2.0	2.0	2.0
	2	20	13.4	13.4	15.4
	3	24	16.1	16.1	31.5
	4	3	2.0	2.0	33.6
	5	17	11.4	11.4	45.0
	6	10	6.7	6.7	51.7
	7	8	5.4	5.4	57.0
	8	8	5.4	5.4	62.4
	9	15	10.1	10.1	72.5
	10	7	4.7	4.7	77.2
	11	20	13.4	13.4	90.6
	12	14	9.4	9.4	100.0
	Total	149	100.0	100.0	

Faculty * Race Crosstabulation

Count

		Race				
		Malay	Chinese	Indian	Other	Total
Faculty	Dentistry	7	3	0	0	10
	Economic and Management	64	17	6	6	93
	Engineering and build environment	44	9	5	4	62
	Education	8	0	0	2	10
	Health sciences	39	23	4	2	68
	Information science and technology	0	0	0	2	2
	Islamic studies	22	0	1	0	23
	Law	7	0	2	0	9
	Medicine	24	6	1	0	31
	Pharmacy	13	7	3	1	24
	Science and Technology	82	9	2	8	101
	Social science and humanities	48	4	3	5	60
Total		358	78	27	30	493

field * Race Crosstabulation

Count

	Race				
	Malay	Chinese	Indian	Other	Total
field 1	1	2	0	0	3
2	10	6	1	3	20
3	19	1	3	1	24
4	2	1	0	0	3
5	9	7	0	1	17
6	8	1	0	1	10
7	7	1	0	0	8
8	4	4	0	0	8
9	14	1	0	0	15
10	2	4	1	0	7
11	17	1	2	0	20
12	9	5	0	0	14
Total	102	34	7	6	149

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	126	25.6	25.6	25.6
	Female	367	74.4	74.4	100.0
	Total	493	100.0	100.0	

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	42	28.2	28.2	28.2
	Female	107	71.8	71.8	100.0
	Total	149	100.0	100.0	

Race

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Malay	358	72.6	72.6	72.6
	Chinese	78	15.8	15.8	88.4
	Indian	27	5.5	5.5	93.9
	Other	30	6.1	6.1	100.0
	Total	493	100.0	100.0	

Father education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary	14	9.4	9.4	9.4
	Secondary	63	42.3	42.3	51.7
	Vocational training	11	7.4	7.4	59.1
	University	53	35.6	35.6	94.6
	Other	8	5.4	5.4	100.0
	Total	149	100.0	100.0	

Mother education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary	17	11.4	11.4	11.4
	Secondary	76	51.0	51.0	62.4
	Vocational training	12	8.1	8.1	70.5
	University	35	23.5	23.5	94.0
	Other	9	6.0	6.0	100.0
	Total	149	100.0	100.0	

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
beentrepreneur	149	1	7	4.70	1.639
privatecompany	149	1	7	4.97	1.409
publicsector	149	1	7	4.87	1.408
NGO	149	1	7	4.91	1.430
Valid N (listwise)	149				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Decision	149	1	7	4.95	1.117
Creativity	149	2	7	5.04	1.185
Problemsolving	149	2	7	4.98	1.148
identifyopportunities	149	1	7	4.89	1.253
Evaluatingopportunities	149	1	7	4.82	1.174
Communicationskills	149	2	7	5.34	1.173
Negotiationskills	149	2	7	4.92	1.124
Networking	149	1	7	5.01	1.279
Needindependent	149	1	7	5.11	1.183
Proactivepersonality	149	1	7	5.01	1.139
Selfefficacy	149	1	7	5.01	1.165
locuscontrol	149	1	7	4.88	1.224
Risktaking	149	1	7	4.96	1.360
Teamwork	149	1	7	5.62	1.160
Developmentnewproduct	149	1	7	5.14	1.263
Leadership	149	1	7	5.46	1.183
Valid N (listwise)	149				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Decision	493	1	7	4.50	1.214
creativity	493	1	7	4.35	1.232
Problemsolving	493	1	7	4.60	1.149
opportunity	493	1	7	4.25	1.329
Presentation	493	1	7	4.34	1.300
communication	493	1	7	4.61	1.255
negotiation	493	1	7	4.41	1.290
networking	493	1	7	4.40	1.302
independent	493	1	7	5.04	1.247
proactive	493	1	7	4.53	1.282
selfefficacy	493	1	7	4.60	1.277
locuscontrol	493	1	7	4.44	1.252
risktaking	493	1	7	4.41	1.319

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Decision	493	1	7	4.50	1.214
creativity	493	1	7	4.35	1.232
Problemsolving	493	1	7	4.60	1.149
opportunity	493	1	7	4.25	1.329
Presentation	493	1	7	4.34	1.300
communication	493	1	7	4.61	1.255
negotiation	493	1	7	4.41	1.290
networking	493	1	7	4.40	1.302
independent	493	1	7	5.04	1.247
proactive	493	1	7	4.53	1.282
selfefficacy	493	1	7	4.60	1.277
locuscontrol	493	1	7	4.44	1.252
risktaking	493	1	7	4.41	1.319
Valid N (listwise)	493				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Be entrepreneur	493	1	7	5.04	1.604
Private company	493	1	7	4.96	1.387
Public Sector	493	1	7	4.75	1.422
NGO	493	1	7	4.60	1.530
Valid N (listwise)	493				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Be entrepreneur	149	1	7	4.70	1.639
Private company	149	1	7	4.97	1.409
Public sector	149	1	7	4.87	1.408
NGO	149	1	7	4.91	1.430
Valid N (listwise)	149				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Entrepreneurshipknowledge	149	1	7	4.83	1.216
Entrepreneurial skill	149	1	7	4.69	1.241
teachingskill	149	1	7	4.78	1.370
realizepotential	149	1	7	4.66	1.404
Helpdecide	149	1	7	4.50	1.436
Valid N (listwise)	149				

Appendix D

UNIVERSIDAD DE SEVILLA

DEPARTAMENTO DE
ECONOMÍA APLICADA I

Prof. Dr. Salmijah Surif,
Deputy Director,
Centre for Entrepeneurship and SME's Development (UKM-CESMED),
University Kebangsaan Malaysia,
43600 Bangi,
Selangor Darul Ehsan,

Malaysia 1 August 2012

Dear Dr. Salmijah,

DATA COLLECTION

MOHD RASHAN SHAH BIN ROBUAN

This is to certify that the above mentioned name is PhD student in University of Seville and currently working on his research assignment at this university.

We sincerely hope that your organisation will allow the student to collect data from the entrepreneurship courses organized by CESMED and to interview some of your staff, review permitted documents, as well as to conduct informal observation at your premises or at certain selected site(s). He will do a pre and post data collection from the students and cross sectional data collection from the trainer of the entrepreneurship course.

We would like to assure you that all information gathered by the student will be treated as confidential. Your assistance and co-operation in the above matter is highly appreciated.

Thank you.

Yours sincerely,

DEPARTAMENTO DE ECONOMIA APLICADA I
UNIVERSIDAD DE SEVILLA

Prof.Dr. Francisco Liñán
Universidad de Sevilla

Facultad de Ciencias Económicas y Empresariales. Av. Ramón y Cajal, 1. 41008 - Sevilla. Tel.: 954.557.547 Fax: 954.551.636

UNIVERSITI KEBANGSAAN MALAYSIA
The National University of Malaysia

Pusat UKM - CESMED *Centre for UKM - CESMED*

UKM 3.2.30/176/2
30 Julai 2013

SENARAI EDARAN

YBhg. Prof/Tuan/Puan,

KELULUSAN MENDAPATKAN DATA DAN MAKLUMAT BAGI SEMUA KURSUS CMIE

Dengan segala hormatnya izinkan saya merujuk perkara di atas.

2. Adalah dimaklumkan bahawa Pusat Pembangunan Keusahawanan dan EKS (UKM-CESMED) telah memberi kelulusan kepada Encik Mohd Rashan Shah bin Robuan, pensyarah di Fakulti Ekonomi dan Pengurusan yang sedang melanjutkan pelajaran di peringkat PH.d di Universidad de Sevilla, Sepanyol untuk mengumpul dan mendapatkan data dan maklumat bagi semua kursus CMIE. Pengumpulan data dan maklumat ini adalah untuk dijadikan bahan kajian bagi thesis beliau.

3. Sehubungan itu, pihak UKM-CESMED memohon jasa baik pihak YBhg.Prof/Tuan/Puan agar dapat memberikan kerjasama yang sewajarnya kepada beliau.

Kerjasama dan perhatian pihak YBhg.Prof/Tuan/Puan amat diharapkan dan didahului dengan ucapan ribuan terima kasih.

Sekian.

Yang benar,

PROF DR MOHD FAUZI MOHD JANI
Pengarah

s.k - **Encik Mohd Rashan bin Robuan**
Fakulti Ekonomi dan Pengurusan
Universiti Kebangsaan Malaysia

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